ZooKeys 62: 1–124 (2010)
doi: 10.3897/zookeys.62.430
www.pensoftonline.net/zookeys

MONOGRAPH

A peer-reviewed open-access journal
ZooKeys
Launched to accelerate biodiversity research

Catalogue of the ants (Hymenoptera, Formicidae) of Bulgaria

Albena Lapeva-Gjonova[1], Vera Antonova[2], Alexander G. Radchenko[3], Maria Atanasova[1]

1 *Sofia University, Department of Zoology and Anthropology, 8 Dragan Tzankov blvd., 1164 Sofia, Bulgaria* **2** *Institute of Biodiversity and Ecosystem Researches, Bulgarian Academy of Sciences, 2 Gagarin str., 1113 Sofia, Bulgaria* **3** *Museum and Institute of Zoology of Polish Academy of Sciences, 64 Wilcza str., 00-679, Warsaw, Poland*

Corresponding author: *Albena Lapeva-Gjonova* (gjonova@abv.bg)

Academic editor: *Donat Agosti* | Received 08 March 2010 | Accepted 01 September 2010 | Published 15 October 2010

Citation: Lapeva-Gjonova A, Antonova V, Radchenko AG, Atanasova M (2010) Catalogue of the ants (Hymenoptera, Formicidae) of Bulgaria. ZooKeys 62: 1–124. doi: 10.3897/zookeys.62.430

Abstract

The present catalogue of the ants (Hymenoptera, Formicidae) of Bulgaria is made on a base of critical reconsideration of literature (covering the period from 1892 till 2009 and part of 2010) as well as on examination of the authors' and several museum's collections. A lot of data were omitted in the previous Bulgarian monograph on ants, lots of new data were recently added and many important additions and alterations were made due to taxonomic revisions of Eurasian Formicidae during the last three decades. Two new species are reported for the country [*Temnothorax graecus* (Forel, 1911) and *Temnothorax* cf. *korbi* (Emery, 1924)].

This catalogue contains a list of 163 ant species belonging to 40 genera of 6 subfamilies now known from Bulgaria. Synonyms and information on the previously reported names in relevant publications are given. Known localities of the species are grouped by geographic regions. Maps with concrete localities or regions for each species were prepared. The conservation status of 13 ant species is given as they are included in IUCN Red List of Threatened Species and Bulgarian Biodiversity Act. In comparison with adjacent Balkan regions the ant fauna of Bulgaria is quite rich and its core is composed of South European elements.

Keywords

ants, Formicidae, Bulgaria, catalogue, new records, fauna, conservation status, geographical distribution

Copyright *Albena Lapeva-Gjonova et al.* This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Introduction

The Bulgarian myrmecofauna is among the richest of the local faunas of Southern Europe. This is a result of the high diversity of natural habitats, variability of climate and orography, and by the complicated history of the origin of the ant fauna of this relatively small territory. Despite a comparatively large number of publications concerning myrmecological investigation in this country, including monographic synthesizing, a lot of data has been omitted by previous authors and much new data has been added recently. To make a complete synopsis of all the existing information we have summarized it and compiled modern Catalogue of Bulgarian ants.

Early studies of the myrmecofauna of Bulgaria started more than 100 years ago, when Auguste Forel (1892) recorded 54 ant species from various regions of the country: the city of Sofia, Rila Mountain, Rhodopi Mountains, Stara Planina Mountains, and South Black Sea coast. Three new species were also described in this paper: *Temnothorax bulgaricus* (as *Leptothorax*), *Cardiocondyla bulgarica* (as *Cardiocondyla elegans* Emery var. *bulgarica*), and *Cardiocondyla stambuloffii*.

The most significant contribution to the fauna and biology of the ants in Bulgaria over the past century was made by Dr. Neno Atanassov, whose first papers were published in the 1930s (Atanassov 1934, 1936), where he reported 57 species. After World War II his monographic work on the fauna and biology of ants of the Vitosha Mountain was published (Atanassov 1952). A couple of other faunistic papers for the Bulgarian territory (Atanassov and Vasileva 1976), particularly of South Dobrudzha (Atanassov and Bulgurkov 1955), Petrich basin (Atanassov 1964), Lozenska Planina Mountain (Vasilev and Evtimov 1973), Rachene river valley (Vasilev 1984) made important additions to our knowledge of the Bulgarian myrmecofauna. Further contributions were also provided by Wesselinoff (1936, 1968, 1972, 1979), Atanassov (1957, 1965, 1982), Urbański (1975), Baroni Urbani (1977, 1978).

In the 1960s and 1980s myrmecological investigations in Bulgaria were concerned mostly with the distribution and biology of red wood ants (Otto et al. 1962, Ronketi and Penev 1966, Wesselinoff 1967, 1972, 1973, 1974, 1979, Keremidchiev et al. 1971, 1972, Bobev 1972, 1973, Atanassov 1974, 1979, 1983, 1990, Gateva 1974, 1975, 1978, Vatov and Bobev 1976, Vesselinov 1981).

Over the last three decades many important additions and alterations to the taxonomy of Eurasian Formicidae, that also include data on Bulgarian ants, have been published (Seifert 1983, 1988a, b, 1990, 1991, 1992, 1995, 1996, 1997a, b, 2000a, b, c, 2002a, b, 2003a, b, 2005, 2006, Radchenko 1989, 1991, 1995a, b, 1997a, b, 2000, 2001, 2007, Radchenko and Elmes 2003, 2004, Schlick-Steiner et al. 2003, 2006a, Seifert and Schultz 2009, Seifert et al. 2009). Two new species have been described from the territory of the country: *Lasius balcanicus* Seifert, 1988 and *Lasius nitidigaster* Seifert, 1996.

The first attempt to summarize data on Balkan ants, including the Bulgarian fauna, was made by Agosti and Collingwood (1987a, b). They reported 112 species for Bulgaria based on data from their own and some other Museum collections, as well as on literature data. However, much of the data from these two papers needs revision and correction.

By far, the most comprehensive information on the Bulgarian myrmecofauna is contained in the book "Fauna of Bulgaria. Hymenoptera, Formicidae" by Atanassov and Dlusskij (1992). It includes data on the taxonomy, distribution and ecology of 111 ant species from 36 genera and 4 subfamilies, with identifications keys of all taxa. However, some species, recorded previously for Bulgaria (Sadil 1952, Barrett 1970, Seifert 1983, 1988a, b, 1990, Agosti and Collingwood 1987a, Buschinger et al. 1988) are omitted from this monograph.

Not surprisingly, a lot of essential additions to Bulgarian ant fauna have been published since 1992. These include faunistic and ecological data of the myrmecofauna of Sofia city and its environs (Antonova 2004, 2005, Lapeva-Gjonova and Atanasova 2004, Antonova and Penev 2006, 2008), Rhodopi Mountains (Lapeva-Gjonova 2004a, Lapeva-Gjonova in press(a)), Strandzha Mountain (Antonova et al. in press), Plana Mountain (Vagalinski and Lapeva-Gjonova in press). Beside this, many ant species have been recorded for Bulgaria for the first time (Seifert 1992, Buschinger and Douwes 1993, Radchenko 1994, Seifert 1995, 1997a, Czechowska et al. 1998, Seifert 2000a, b, Markó and Csősz 2002, Csősz and Seifert 2003, Radchenko and Antonova 2004, Stankiewicz and Antonova 2005, Csősz and Markó 2005, Steiner et al. 2005, Seifert 2006, Antonova 2009, Bezděčka and Bezděčková 2009, Csősz and Schulz 2010, Lapeva-Gjonova in press (b)).

As a result, we now include in the List of Bulgarian fauna 163 ant species belonging to 40 genera of 6 subfamilies.

Materials and order of the Catalogue

The Catalogue we present here is based on the investigation of ants collected personally by the authors in various regions of Bulgaria during last decade, as well as on the material, preserved in the following Museums and Institutions: private collection of A. Lapeva-Gjonova, Faculty of Biology, Sofia University; private collection of V. Antonova, Institute of Biodiversity and Ecosystem Researches, Bulgarian Academy of Sciences, Sofia (IBER); Zoological Museum of the Moscow State University, Russia (ZMMU); Museum and Institute of Zoology of Polish Academy of Sciences, Warsaw, Poland (MIZ); Shmalhausen Institute of Zoology of Ukrainian National Academy of Sciences, Kiev, Ukraine (SIZK); National Museum of Natural History, Prague, Czech Republic (NMNHP). All the available literature was also surveyed and the data therein used and in some cases critically reviewed.

Dr. Neno Atanassov's collection of ants is kept in the National History Museum in Sofia and includes a few thousands of mounted specimens. Unfortunately, the collection is almost useless as the specimens have no locality labels but only numbers.

This catalogue contains a list of ant species, currently known in Bulgaria. Synonyms, information on the previously reported names and localities are included. Two new species [*Temnothorax graecus* (Forel, 1911) and *Temnothorax* cf. *korbi* (Emery, 1924)] for the country are reported.

The arrangement of genera in the subfamilies in the catalog is given by tribes. The species within each genus are listed in alphabetical order. Actual names of genera and species, and their authors are consistent with the most recent world catalogues of ants (Bolton 2003, Bolton et al. 2006) or, in the case of subsequent publications, with the most recent publications of the relevant authors.

Publications by both Bulgarian and foreign authors concerning Bulgarian ants covering the period from 1892 till 2009 (2010, part) have been considered. After the actual name of the species, a list of synonyms and names used in relevant publications is given. Known localities of the species are grouped by geographic regions and subregions, arranged in the order given by Hubenov (1997) (Map 1). We have introduced additional regions and/or subregions for localities, which are not adequately covered by that classification system. Some of the localities, given in the references with obsolete names in older references, have been updated here. A few of the names could not be associated with any city or geographical location in the country due to typographical errors or incorrect transliteration. We have cited them in an italic font in the text. Publications without any reference to particular localities in the country are included before all other localities as referring generally to Bulgaria. Notes with comments on taxonomic position and distribution are added for some species.

IUCN species categories are given by the last "1994 Red List Categories & Criteria (version 2.3)" (IUCN 2009). It incorporates changes as a result of comments from IUCN members and was adopted by the IUCN Council in December 1994. In the recent catalogue the global status category for a given taxon is included. The national status of all the species recorded from Bulgaria that are listed in the IUCN report need updating.

Maps with concrete localities or regions for each species have been prepared. Whenever the number of localities for a species is very low, the information for two or more species is combined on a common map. In some cases species have been reported without a specific locality and only region or subregion were noted. In these cases the species are assigned to the whole area (region or subregion).

Catalogue

Subfamily Amblyoponinae

Genus *Amblyopone* Erichson, 1842

***Amblyopone denticulata* (Roger, 1859)**

= *Amblyopone gheorghieffi* Forel, 1892

Records (Map 2): **Bulgaria** (Agosti and Collingwood 1987a); **Eastern Stara Planina Mts:** Sliven [Forel 1892 (as A. *gheorghieffi*), Baroni Urbani 1978]; **Surnena Sredna Gora Mts:** the slopes of Sredna Gora Mts by Stara Zagora (Atanassov and Dlusskij 1992).

***Amblyopone impressifrons* (Emery, 1869)**

Records (Map 2): **Thracian Lowland:** Svilengrad district, **Krupnik-Sandanski-Petrich Valley:** Kulata (Atanassov and Dlusskij 1992).

Subfamily Ponerinae

Genus *Cryptopone* Emery, 1893

***Cryptopone ochracea* (Mayr, 1855)**

Records (Map 3): **Eastern Danubian Plain**; **Thracian Lowland**; **Krupnik-Sandanski-Petrich Valley:** Petrich (Atanassov and Dlusskij 1992).

Genus *Hypoponera* Santschi, 1938

***Hypoponera eduardi* (Forel, 1894)**

Records (Map 4): **Krupnik-Sandanski-Petrich Valley:** Petrich district (Atanassov and Dlusskij 1992).

Notes: Atanassov and Dlusskij (1992) on page 69 noted that this species is widespread in Southern Europe but is absent from Bulgaria, while on a page 71 they report it from the Petrich region.

***Hypoponera punctatissima* (Roger, 1859)**

Records (Map 4): **Eastern Danubian Plain:** Silistra (Atanassov and Dlusskij 1992); **Sofia Basin:** Sofia [Atanassov 1936 (as *Ponera punctatissima*), Atanassov and Dlusskij 1992]; **Sredna Gora Mts** (Atanassov and Dlusskij 1992); **Sushtinska Sredna gora Mts:** Hisarya [Atanassov 1936 (as *Ponera punctatissima*)]; **Krupnik-Sandanski-Petrich Valley:** Kulata, Melnik (Atanassov and Dlusskij 1992).

Genus *Ponera* Latreille, 1804

***Ponera coarctata* (Latreille, 1802)**

Records (Map 5): **Bulgaria** (Emery 1914, Taylor 1967, Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992); **Eastern Danubian Plain:** Razgrad, Ruse, Shumen (Wesselinoff 1936); **Sofia Basin:** Sofia (Atanassov 1936, Lapeva-Gjonova

and Atanasova 2004, Antonova 2005, Antonova and Penev 2006, 2008); **Strandzha Mt.** (Wesselinoff 1936); **Belasitsa Mt.** (Atanassov 1964, Hubenov et al. 1998); **Krupnik-Sandanski-Petrich Valley:** Petrich (Atanassov 1964); **Western Rhodopi Mts:** Asenovgrad (Wesselinoff 1936), Peshtera (Lapeva-Gjonova in press(a)); **Eastern Rhodopi Mts:** Zvezdel vill. (Momchilgrad) (Lapeva-Gjonova 2004a); **Northern Black Sea coast:** Varna district (Wesselinoff 1936); **Southern Black Sea coast:** Rezovo (Atanassov 1936).

Notes: See *Ponera testacea*.

Ponera testacea Emery, 1895

Records (Map 5): **Krupnik-Sandanski-Petrich Valley:** Melnik, Melnik river valley, Rozhen (Csősz and Seifert 2003).

Notes: Csősz and Seifert (2003) revived the name *P. coarctata* var. *testacea* from synonymy and raised it to species. *P. testacea* is a more thermophilous species than *P. coarctata* and seems to be widely distributed in Southern Europe. We are pretty sure that many of the previous records of *P. coarctata* for Bulgaria might belong to *P. testacea*.

Subfamily Proceratiinae

Genus *Proceratium* Roger, 1863

Proceratium melinum (Roger, 1860)

Records (Map 6): **Eastern Danubian Plain:** Dobrudzha (Atanassov and Dlusskij 1992); **Thracian Lowland:** Svilengrad (Atanassov and Dlusskij 1992); **Krupnik-Sandanski-Petrich Valley:** Petrich, Sandanski (Atanassov and Dlusskij 1992); **Southern Black Sea coast:** Burgas [(Forel 1895 (as *P. europaeum*), Baroni Urbani 1977, Baroni Urbani and De Andrade 2003, Atanassov and Dlusskij 1992].

Proceratium numidicum Santschi, 1912

Records: Bulgaria (Agosti and Collingwood 1987a).

Notes: This species was omitted by Atanassov and Dlusskij (1992). It was described from Tunisia and reported for Albania (Brown 1958), Turkey (Egridir) (Baroni Urbani 1977) and Cyprus (Baroni Urbani and De Andrade 2003). Agosti and Collingwood (1987a) recorded this species without any comments on Bulgaria. The presence of *P. numidicum* in Bulgaria needs confirmation.

Subfamily Myrmicinae

Genus *Pyramica* Roger, 1862

Pyramica baudueri (Emery, 1875)

Records (Map 6): **Eastern Rhodopi Mts:** near Shiroko pole vill. (Momchilgrad) (Bezděčka and Bezděčková 2009).

Notes: After revision of the tribe Dacetini and proposed synonymisation of many generic names (e.g. Bolton 1999, 2000, 2003, Bolton et al. 2006) this species was considered to be in the genus *Pyramica*. However, recently, Baroni Urbani and De Andrade (2007) provided a new reassessment of the tribe Dacetini and formally synonymised *Pyramica* with *Strumigenys* F. Smith. This system is not fully accepted currently (2010) and, perhaps, needs additional revisions and we use here the system, proposed by Bolton (2000, 2003).

Genus *Manica* Jurine, 1807

Manica rubida (Latreille, 1802)

Records (Map 7): **Bulgaria** (Agosti and Collingwood 1987a); **Central Predbalkan:** Dermantsi vill. (Lukovit) [Atanassov 1934 (as *Myrmica rubida*), Atanassov and Dlusskij 1992]; **Central Stara Planina Mts:** Botev peak (Ray hut) [Atanassov 1936 (as *Myrmica rubida*)]; **Vitosha Mt.** [Atanassov 1936 (as *Myrmica rubida*), Atanassov and Dlusskij 1992]; **Podbalkan Basins:** Karlovo gorge [Atanassov 1934 (as *Myrmica rubida*)]; **Osogovska Planina Mt.:** Ruen peak [Atanassov 1934 (as *Myrmica rubida*)], Kamen peak [Atanassov 1936 (as *Myrmica rubida*)]; **Rila Mt.:** Elenin peak, Rilska river valley (Forel 1892), Borovets [Atanassov 1934 (as *Myrmica rubida*)], Musala peak [Atanassov 1936 (as *Myrmica rubida*), Atanassov and Dlusskij 1992]; **Slavianka Mt.:** Alibotush reserve (Antonova 2009); **Western Rhodopi Mts:** Peshtera, Smolyan, Dospat, Rakitovo, Batak (Lapeva-Gjonova in press(a)); **Southern Black Sea coast:** Maslen nos (Atanassov 1934, Atanassov and Dlusskij 1992).

Notes: The locality Maslen nos (20 m asl) is the lowest one for the species in Bulgaria (Atanassov and Dlusskij 1992). We did not examine correspondent material, but based on the current knowledge of the distribution and ecology of this species we may expect that this record is based on mislabeling or misidentification.

Genus *Myrmica* Latreille, 1804

Myrmica constricta Karavajev, 1934

Records (Map 8): **Krupnik-Sandanski-Petrich Valley:** Melnik (Seifert et al. 2009).

Myrmica gallienii Bondroit, 1920

= *Myrmica limanica* Arnoldi, 1934

Records (Map 8): **Bulgaria** (Agosti and Collingwood 1987a, Seifert 1988a: the Balkans); **Western Predbalkan:** Rachene river valley [Vasilev 1984 (as *M. limanica*)]; **Vitosha Mt.** (Atanassov and Dlusskij 1992).

Myrmica hellenica Finzi, 1926

= *Myrmica rugulososcabrinodis* Karawajew, 1929

Records (Map 8): **Thracian Lowland:** Maritsa river valley (near by Haskovo), *Betova* (Seifert 1988a, Seifert et al. 2009); **Sofia Basin:** Sofia [Radchenko and Antonova 2004, Antonova 2005, Antonova and Penev 2006, 2008 (all as *M. rugulososcabrinodis*)]; **Krupnik-Sandanski-Petrich Valley:** Melnik, Sandanski [Seifert 1988a, Radchenko and Antonova 2004 (as *M. rugulososcabrinodis*), Seifert et al. 2009]; **Northern Black Sea coast:** Obzor (Seifert et al. 2009); **Southern Black Sea coast:** Burgas (Seifert et al. 2009).

Notes: Very recently Seifert et al. (2009) synonymised *M. rugulososcabrinodis* with *M. hellenica*. This species was omitted by Atanassov and Dlusskij (1992).

Myrmica lobicornis Nylander, 1846

Records (Map 8): **Bulgaria** (Agosti and Collingwood 1987a, Seifert 1988a: entire Europe excluding Italy and Greece); **Central Stara Planina Mts:** Karlovo Balkan (Atanassov 1936, Atanassov and Dlusskij 1992); **Vitosha Mt.** (Atanassov 1936, 1952, Atanassov and Dlusskij 1992); **Plana Mt.:** Plana vill., Tsiganka peak (Pasarel vill.) (Vagalinski and Lapeva-Gjonova in press); **Osogovska Planina Mt.**, **Belasitsa Mt.** (Atanassov and Dlusskij 1992); **Rila Mt.:** Elenin peak, Rilska river valley (Forel 1892, Atanassov and Dlusskij 1992); **Pirin Mt.** (Atanassov and Dlusskij 1992); **Slavianka Mt.:** Alibotush reserve (Antonova 2009); **Rhodopi Mts** (Atanassov and Dlusskij 1992); **Western Rhodopi Mts:** Peshtera (Lapeva-Gjonova in press(a)).

Myrmica lonae Finzi, 1926

Records (Map 9): **Bulgaria** (Seifert 2005); **Sofia Basin:** Sofia, surroundings of Sofia (Antonova and Penev 2006, 2008); **Lozenska Planina Mt.** near German monastery (Antonova and Penev 2008); **Strandzha Mt.** (Antonova et al. in press); **Western Rhodopi Mts:** Dobrostan (Seifert 2000b), Rakitovo (Lapeva-Gjonova in press(a)).

Notes: Since *M. lonae* was for a long time considered to be a junior synonym of *M. sabuleti*, some old records of the latter species (see below) may belong to *M. lonae*.

Myrmica rubra (Linnaeus, 1758)

= *Myrmica laevinodis* Nylander, 1846

Records (Map 9): **Bulgaria** (Emery 1914, Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992); **Central Stara Planina Mts:** along Kostinya river (Teteven Balkan) [Atanassov 1936 (as *M. rubra laevinodis*)]; **Eastern Stara Planina Mts:** Sliven [Forel 1892 (as *M. laevinodis*)]; **Sofia Basin:** Sofia (Lapeva-Gjonova and Atanasova 2004, Antonova and Penev 2006, 2008); **Vitosha Mt.** [Atanassov 1952 (as *M. laevinodis*)]: Knyazhevo [Forel 1892 (as *M. laevinodis*)], Zheleznitsa vill. [Atanassov 1936 (as *M. rubra laevinodis*)]; **Plana Mt.:** Plana vill., Kokalyane monastery (Kokalyane vill.), Ivanova mogila peak (Alino vill.) (Vagalinski and Lapeva-Gjonova in press); **Western Rhodopi Mts:** Batak, Velingrad, Rakitovo, Peshtera, Smolyan (Lapeva-Gjonova in press(a)).

Myrmica ruginodis Nylander, 1846

Records (Map 10): **Bulgaria** (Emery 1914, Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992); **Sofia Basin:** Sofia (Lapeva-Gjonova and Atanasova 2004, Antonova 2005, Antonova and Penev 2006, 2008), surroundings of Sofia near Vladaya vill. (Antonova and Penev 2006, 2008); **Vitosha Mt.** (Atanassov 1936, 1952); **Plana Mt.:** Kokalyane monastery (Kokalyane vill.), Astronomical observatory (between Plana vill. and Dolni Okol vill.), east of Zheleznitsa vill., under Muhchel peak (Dolni Okol vill.), Tsiganka peak (Pasarel vill.), Peyova buka hut (Pasarel vill.) (Vagalinski and Lapeva-Gjonova in press); **Belasitsa Mt.:** at the foot of Belasitsa Mt. (Atanassov 1964); **Krupnik-Sandanski-Petrich Valley:** plain by Strumeshnitsa river (Atanassov 1964); **Rila Mt.:** Rila monastery (Forel 1892), Borovets (Atanassov 1936); **Slavianka Mt.:** Alibotush reserve (Antonova 2009); **Western Rhodopi Mts:** Devin, Chepelare (Lapeva-Gjonova in press(a)).

Myrmica rugulosa Nylander, 1849

Records (Map 10): **Bulgaria** (Agosti and Collingwood 1987a, Seifert 1988a: north of 41 ° N in the Balkans); **Western Stara Planina Mts:** above Berkovitsa (Atanassov and Dlusskij 1992); **Central Stara Planina Mts:** under Vezhen peak (Atanassov and Dlusskij 1992); **Eastern Stara Planina Mts:** Chumerna (Atanassov and Dlusskij 1992); **Sofia Basin:** Sofia (Lapeva-Gjonova and Atanasova 2004, Antonova 2005, Antonova

and Penev 2006, 2008), surroundings of Sofia near Vladaya vill. (Antonova and Penev 2006, 2008); **Lozenska Planina Mt.** near German monastery (Antonova and Penev 2008); **Thracian Lowland:** Pazardzhik (Forel 1892); **Rila Mt.:** Raduil, Rila monastery (Atanassov and Dlusskij 1992); **Western Rhodopi Mts:** Asenovgrad (Atanassov and Dlusskij 1992), Peshtera, Chepelare, Smolyan (Atanassov and Dlusskij 1992); **Eastern Rhodopi Mts:** Momchilgrad (Atanassov and Dlusskij 1992).

Myrmica sabuleti Meinert, 1861

Records (Map 11): **Bulgaria** (Agosti and Collingwood 1987a, Seifert 2005); **Western Predbalkan:** Rachene river valley (Vasilev 1984); **Stara Planina Mts** (Atanassov and Dlusskij 1992); **Sofia Basin:** Sofia (Antonova 2004, 2005, Lapeva-Gjonova and Atanasova 2004, Antonova and Penev 2006, 2008); **Vitosha Mt.** (Atanassov 1952, Atanassov and Dlusskij 1992, Hubenov et al. 1998); **Plana Mt.:** Tsiganka peak (Pasarel vill.), Bukov dol loc. (Pasarel vill.), Pasarel vill., Alino vill., Peyova buka hut (Pasarel vill.) (Vagalinski and Lapeva-Gjonova in press); **Lozenska Planina Mt.:** near German monastery (Antonova and Penev 2008); **Strandzha Mt.** (Antonova et al. in press); **Rila Mt.**, **Pirin Mt.**, **Rhodopi Mts** (Atanassov and Dlusskij 1992); **Western Rhodopi Mts:** Batak, Dospat, Rakitovo (Lapeva-Gjonova in press(a)); **Eastern Rhodopi Mts:** Byal Izvor vill. (Arda), Zvezdel vill. (Momchilgrad), Malki Voden vill. (Madzharovo), Kokiche vill. (Kardzhali) (Lapeva-Gjonova 2004a); **South Bulgaria** (Seifert 1988a).

Myrmica scabrinodis Nylander, 1846

Records (Map 11): **Bulgaria** (Agosti and Collingwood 1987a, Seifert 1988a, Atanassov and Dlusskij 1992); **Central Predbalkan:** Dermantsi vill. (Lukovit) (Atanassov 1934); **Eastern Stara Planina Mts:** Sliven (Forel 1892); **Sofia Basin:** Sofia (Forel 1892, Lapeva-Gjonova and Atanasova 2004, Antonova 2005, Antonova and Penev 2006, 2008); **Vitosha Mt.** (Atanassov 1934, 1952); **Plana Mt.:** Pasarel vill. (Vagalinski and Lapeva-Gjonova in press); **Lozenska Planina Mt.** (Vasilev and Evtimov 1973), near German monastery (Antonova and Penev 2008); **Bakadzhik-Burgas district:** Aytos (Forel 1892); **Belasitsa Mt.:** slopes of Belasitsa Mt. (Atanassov 1964, Hubenov et al. 1998); **Western Rhodopi Mts:** Smolyan, Peshtera, Batak (Lapeva-Gjonova in press(a)).

Myrmica schencki Viereck, 1903

Records (Map 12): **Bulgaria** (Agosti and Collingwood 1987a, Seifert 1988a); **Stara Planina Mts** (Atanassov and Dlusskij 1992); **Sofia Basin:** Sofia (Lapeva-Gjonova and

Atanasova 2004, Antonova 2005, Antonova and Penev 2006, 2008); surroundings of Sofia near Vladaya vill. (Antonova and Penev 2006, 2008); **Vitosha Mt.** (Atanassov 1952, Atanassov and Dlusskij 1992); **Plana Mt.:** Tsiganka peak (Pasarel vill.), Bukov dol loc. (Pasarel vill.), Pasarel vill., Alino vill., Turmachka neighbourhood (Plana vill.) (Vagalinski and Lapeva-Gjonova in press); **Lozenska Planina Mt**. near German monastery (Antonova and Penev 2008); **Krupnik-Sandanski-Petrich Valley:** west of Petrich, around Mitino vill. (Atanassov 1964, Hubenov et al. 1998); **Rila Mt.** (Atanassov and Dlusskij 1992); **Pirin Mt.** (Atanassov and Dlusskij 1992): Rozhen vill. (Seifert 2003a); **Rhodopi Mts** (Atanassov and Dlusskij 1992); **Western Rhodopi Mts:** Chepelare, Smolyan, Rakitovo (Lapeva-Gjonova in press(a)).

Myrmica slovaca Sadil, 1952

M. salina: Seifert 1988a, 2002a, Antonova 2005, Antonova and Penev 2006, 2008, *nec* Ruzsky, 1905

Records (Map 12): **Sofia Basin:** Sofia [Antonova 2005, Antonova and Penev 2006, 2008 (all as *M. salina*)]; **Strandzha Mt.:** *Tirnovo* [Seifert 2002a (as *M. salina*)]; **Western Rhodopi Mts:** Bachkovo [Sadil 1952, Seifert 1988a (as *M. salina*)].

Notes: During the last decade *M. slovaca* has been considered as a junior synonym of *M. salina* Ruzsky, 1905, but very recently Radchenko and Elmes (2009) based on the finding of Ruzsky's original type material of *M. salina* showed that these two species are not conspecific and revived the name *M. slovaca* from synonymy.

Despite the fact that one of the type localities of *M. slovaca* is in Bulgaria, this species was omitted by Atanassov and Dlusskij (1992).

Myrmica specioides Bondroit, 1918

= *Myrmica sancta* Karawajew, 1926
Myrmica bessarabica: Atanassov and Dlusskij 1992, *nec* Nasonov, 1889

Records (Map 13): **Bulgaria** (Agosti and Collingwood 1987a); **Sofia Basin:** Sofia (Antonova 2005, Antonova and Penev 2006, 2008), near Vladaya vill. (Antonova and Penev 2008); **Lyulin Mt.** [Atanassov and Dlusskij 1992 (as *M. bessarabica*)]; **Strandzha Mt.:** Malko Tarnovo (Seifert 1988a); **Rila Mt.:** Kostenets [Atanassov and Vasileva 1976 and Hubenov et al. 1998 (as *M. sancta*)]; **Southern Black Sea coast:** Sozopol (Seifert 1988a).

Notes: After examination of the "holotype" of *M. bessarabica* Seifert (2002a) found that there is a discrepancy between Nasonov's original description and the characteristics of this specimen, and proposed considering *M. bessarabica incertae sedis* in the genus *Myrmica*, and revived the name *M. specioides* from synonymy (see also Radchenko and Elmes 2004).

Myrmica sulcinodis Nylander, 1846

Records (Map 13): **Bulgaria** (Agosti and Collingwood 1987a, Seifert 1988a, Atanassov and Dlusskij 1992); **Western Stara Planina Mts:** Milanovo vill. (Vratsa) (Atanassov 1936); **Sofia Basin:** surroundings of Sofia near Vladaya vill. (Antonova 2004, Antonova and Penev 2006, 2008); **Lyulin Mt.** (Atanassov 1936); **Vitosha Mt.** (Atanassov 1952); **Plana Mt.:** Astronomical observatory (between Plana vill. and Dolni Okol vill.) (Vagalinski and Lapeva-Gjonova in press); **Belasitsa Mt.:** the slopes of Belasitsa (Atanassov 1964, Hubenov et al. 1998); **Krupnik-Sandanski-Petrich Valley:** Luda Mara river valley (Atanassov 1964); **Rila Mt.:** Elenin peak (Forel 1892), Kostenets (Atanassov 1936); **Western Rhodopi Mts:** Smolyan, Peshtera, Rakitovo (Lapeva-Gjonova in press(a)).

Myrmica vandeli Bondroit, 1920

Records (Map 13): **Vitosha Mt.:** above Selimitsa hut (Stankiewicz and Antonova 2005).

Notes: The locality for this species in Bulgaria is the southernmost in Europe (Stankiewicz and Antonova 2005).

Genus *Stenamma* Westwood, 1839

Stenamma debile (Förster, 1850)

Stenamma westwoodi: Emery 1914, Atanassov 1964, Atanassov and Dlusskij 1992, Hubenov et al. 1998, Lapeva-Gjonova and Atanasova 2004, *nec* Westwood, 1839

Records (Map 14): **Bulgaria** (Emery 1914); **Western Danubian Plain:** Vidin (Atanassov 1964); **Western Stara Planina Mts:** under Todorini Kukli peak (Atanassov and Dlusskij 1992), Chepan (Dragoman) (Borisova et al. 2005); **Eastern Stara Planina Mts:** Karandila, under Razboyna peak (Atanassov and Dlusskij 1992); **Sofia Basin:** Sofia [Lapeva-Gjonova and Atanasova 2004 (as *St. westwoodi*), Antonova 2005, Antonova and Penev 2006, 2008]; **Plana Mt.:** Peyova buka hut (Pasarel vill.) (Vagalinski and Lapeva-Gjonova in press.); **Sushtinska Sredna Gora Mts:** under Bratiya peak (Atanassov and Dlusskij 1992); **Belasitsa Mt.** [Atanassov 1964 (as *St. westwoodi*), Hubenov et al. 1998]; **Western Rhodopi Mts:** Asenovgrad (Atanassov and Dlusskij 1992), Peshtera (Lapeva-Gjonova in press(a)); **Eastern Rhodopi Mts:** Momchilgrad (Atanassov and Dlusskij 1992).

Notes: According to DuBois (1993) *St. westwoodii* is distributed only in Western Europe, so all previous records for it in Bulgaria should refer to *St. debile*, which is a more widespread European species.

Genus *Aphaenogaster* Mayr, 1853

Aphaenogaster epirotes (Emery, 1895)

Records (Map 15): **Eastern Danubian Plain:** Dobrich (Atanassov and Dlusskij 1992); **Eastern Rhodopi Mts:** Svirachi vill. (Ivaylovgrad), between Odrintsi and Svirachi vill. (Lapeva-Gjonova 2004a).

Aphaenogaster gibbosa (Latreille, 1798)

Records (Map 15): **Western Stara Planina Mts:** Chepan (Dragoman) (Borisova et al. 2005); **Krupnik-Sandanski-Petrich Valley:** west of Petrich, along Strumeshnitsa river (Atanassov 1964), Petrich (Hubenov et al. 1998); **Slavianka Mt.:** above Paril vill. (Atanassov and Dlusskij 1992); **Eastern Rhodopi Mts:** Momchilgrad, Ivaylovgrad (Atanassov and Dlusskij 1992); **Northern Black Sea coast:** Obzor vill. district (Atanassov and Dlusskij 1992).

Aphaenogaster pallida (Nylander, 1849)

Records (Map 16): **Western Predbalkan:** Rachene river valley (Vasilev 1984).
Notes: This species is distributed in France, Canary Islands, Italy, Corsica, Sicily, Algeria, Morocco and Tunisia. The record of this species for Bulgaria is quite doubtful and needs confirmation.

Aphaenogaster subterranea (Latreille, 1798)

Records (Map 16): **Bulgaria** (Emery 1914, Agosti and Collingwood 1987a); **Western Predbalkan:** Rachene river valley (Vasilev 1984); **Eastern Stara Planina Mts:** Sliven (Forel 1892), Byala vill. (Sliven) (Atanassov 1936), Karandila (Atanassov and Dlusskij 1992); **Vitosha Mt.** (Atanassov 1952); **Bakadzhik-Burgas district:** Aytos (Forel 1892); **Strandzha Mt.** (Antonova et al. in press): Papia peak (Atanassov 1936, Atanassov and Dlusskij 1992); **Osogovska Planina Mt.:** Hisarlaka (Atanassov 1936, Atanassov and Dlusskij 1992); **Belasitsa Mt.:** at the foot of Belasitsa Mt. (Atanassov 1964, Atanassov and Dlusskij 1992, Hubenov et al. 1998); **Slavianka Mt.** (Atanassov and Dlusskij 1992); **Rhodopi Mts** (Atanassov and Dlusskij 1992); **Western Rhodopi Mts:** Smolyan (Lapeva-Gjonova in press(a)); **Eastern Rhodopi Mts:** Madzharovo district, Malko Popovo and Malki Voden vill. (Madzharovo municipality), between Dabovets and Kamilski dol vill. (Ivaylovgrad), between Odrintsi vill. and Svirachi vill. (Ivaylovgrad) (Lapeva-Gjonova 2004a); **Northern Black Sea coast:** Obzor vill. (Atanassov and Dlusskij 1992).

Genus *Messor* Forel, 1890

Notes: Taxonomy of the genus *Messor*, particularly in Europe, is poorly resolved and many taxonomic problems need further elaboration. Therefore (see below) we left all the species names recorded by previous authors without comments, but we stress that many of the records need confirmation.

Messor atanassovii Atanassov, 1982

Records (Map 17): **Thracian Lowland:** Zagore vill. (Stara Zagora), Belozem vill. (Plovdiv) (Atanassov 1982, Atanassov and Dlusskij 1992); **Strandzha Mt.** (Antonova et al. in press); **Mesta Valley:** Dolno Dryanovo (Atanassov and Dlusskij 1992); **Western Rhodopi Mts:** Asenovgrad (Atanassov 1982, Atanassov and Dlusskij 1992).

Messor barbarus (Linnaeus, 1767)

Aphaenogaster (*Messor*) *barbara* L. var. *barbaro-structor* Dalla Tore, 1893 (*nomen nudum*): Forel 1892.
Aphaenogaster (*Messor*) *barbara* L. var. *sordida* Forel, 1892: Forel 1895.

Records (Map 17): **Bulgaria** (Csősz and Markó 2005); **Thracian Lowland:** Pazardzhik (Forel 1892); **Bakadzhik-Burgas district:** Aytos (Forel 1892); **Dupnitsa Basin:** Dupnitsa (Forel 1892); **Northern Black Sea coast:** Kavarna (Markó and Csősz 2002); **Southern Black Sea coast:** Pomorie, Veselie vill. (Forel 1892), Burgas (Forel 1895).

Notes: This species was omitted by Atanassov and Dlusskij (1992).

Messor caducus (Motschoulsky, 1839)

Messor semirufus meridionalis: Atanassov 1936, 1964, Atanassov and Vasileva 1976, Hubenov et al. 1998, *nec* André, 1883

Records (Map 18): **Bulgaria** (Atanassov and Dlusskij 1992); **Podbalkan Basins:** Sotirya vill. (Sliven) [Atanassov and Vasileva 1976 (as *M. semirufus meridionalis*)]; **Thracian Lowland:** Harmanli [Atanassov and Vasileva 1976 and Hubenov et al. 1998 (as *M. semirufus meridionalis*)]; **Ograzhden Mt.** [Atanassov and Vasileva 1976 (as *M. semirufus meridionalis*)]; **Belasitsa Mt.** (Hubenov et al. 1998): east slopes of Belasitsa Mt. [Atanassov 1964 (as *M. semirufus meridionalis*)]; **Krupnik-Sandanski-Petrich Valley:** Petrich [Atanassov and Vasileva 1976 (as *M. semirufus meridionalis*)]; **Eastern Rhodopi Mts:** Kardzhali [Atanassov and Vasileva 1976 (as *M. semirufus meridionalis*)]; **Northern Black Sea coast:** Obzor [Atanassov and Vasileva 1976 and Hubenov et al.

1998 (as *M. semirufus meridionalis*)]; **Southern Black Sea coast:** Ropotamo river – Sozopol [Atanassov 1936 (as *M. semirufus* var. *meridionalis*)].

Messor capitatus (Latreille, 1798)

Records (Map 18): **Bulgaria** (Csősz and Markó 2005); **Northern Black Sea coast:** Kavarna, Kaliakra (Markó and Csősz 2002).

Messor concolor Santschi, 1927

Records (Map 19): **Bulgaria** (Agosti and Collingwood 1987a); **Thracian Lowland:** Klokotnitsa (Schlick-Steiner et al. 2006a).

Notes: This species was omitted by Atanassov and Dlusskij (1992).

Messor oertzeni Forel, 1910

= *Messor oertzeni* Forel var. *amphigea* Forel, 1911: Atanassov 1934, 1964

Records (Map 19): **Bulgaria** (Agosti and Collingwood 1987a); **Ihtimanska Sredna Gora Mts:** Benkovski peak (Atanassov 1934); **Krupnik-Sandanski-Petrich Valley:** Petrich (Atanassov 1934), above Marino pole vill. [Atanassov 1964 (as *M. oertzeni* var. *amphigea*)]; **Ograzhden Mt.**, **Belasitsa Mt.** [Atanassov 1964 (as *M. oertzeni* var. *amphigea*)]; **Slavianka Mt.** (Atanassov and Dlusskij 1992); **Western Rhodopi Mts** (Atanassov and Dlusskij 1992); **Eastern Rhodopi Mts:** Senoklas vill. (Madzharovo), Svirachi vill. (Ivaylovgrad) (Lapeva-Gjonova 2004a); **Northern Black Sea coast:** Evksinograd palace (Atanassov and Dlusskij 1992).

Messor structor (Latreille, 1798)

= *Messor muticus* Nylander, 1849
= *Messor barbarus varrialei* Emery, 1921
= *Messor clivorum* Ruzsky, 1905
= *Messor rufitarsis* Fabricius, 1804

Records (Map 20): **Bulgaria** [Agosti and Collingwood 1987a (as *M. muticus*), Atanassov and Dlusskij 1992]; **Western Predbalkan:** Rachene river valley [Atanassov and Vasileva 1976 (as *M. clivorum*), Vasilev 1984]; **Central Predbalkan:** Dermantsi vill. (Lukovit) [Atanassov 1936 (as *M. barbarus varrialei* and *M. structor rufitarsis*), Atanassov and Vasileva 1976 (as *M. rufitarsis romanus*)]; **Western Stara Planina Mts:**

Milanovo vill., Lakatnik station [Atanassov 1934, 1936 (as *M. barbarus varrialei* and *M. structor rufitarsis*), Atanassov and Vasileva 1976 (as *M. clivorum*)], Vrattsata loc., Zgorigrad vill. [Atanassov and Vasileva 1976 (as *M. clivorum*)], Vratsa [Hubenov et al. 1998 (as *M. clivorum*)], Chepan Mt. (Dragoman) (Borisova et al. 2005); **Zemen Gorge:** Skakavitsa waterfall, Zemen station [Atanassov 1936 (as *M. barbarus varrialei* and *M. structor rufitarsis*)], Zemen (Schlick-Steiner et al. 2006a); **Sofia Basin:** surroundings of Sofia (Antonova and Penev 2006); **Lyulin Mt.** (Vasilev and Evtimov 1973); **Vitosha Mt.** [Hubenov et al. 1998 (as *M. clivorum*)]: Boyana [Atanassov 1934 (as *M. barbarus structor var. mutica*), 1952 (as *M. rufitarsis*)]; **Plana Mt.:** Pasarel vill., Peyova buka hut (Pasarel vill.), Grobat peak (Vagalinski and Lapeva-Gjonova in press); **Podbalkan Basins:** Rose valley [Atanassov et al. 1955 (as *M. rufitarsis*)]; **Ihtimanska Sredna Gora:** Benkovski peak [Atanassov 1936 (as *M. barbarus varrialei* and *M. structor rufitarsis*)]; **Lozenska Planina Mt.** (Vasilev and Evtimov 1973); north of Pasarel vill. (Antonova and Penev 2008); **Thracian Lowland:** Pazardzhik (Forel 1892), Plovdiv (Forel 1911), Harmanli [Urbanski 1975 (as *M. rufitarsis*)]; **Bakadzhik-Burgas district:** Aytos (Forel 1892), Mandra lake [Atanassov and Vasileva 1976 (as *M. clivorum*)]; **Osogovska Planina Mt.:** Hisarlaka [Atanassov 1936 (as *M. barbarus varrialei* and *M. structor rufitarsis*)]; **Ograzhden Mt.** [Atanassov 1964 (as *M. barbarus varrialei* and *M. structor rufitarsis*)]; **Belasitsa Mt.:** at the foot of Belasitsa Mt. [Atanassov 1964 (as *M. barbarus varrialei* and *M. structor rufitarsis*)]; **Krupnik-Sandanski-Petrich Valley:** Kresna gorge [Atanasov 1936 (as *M. structor rufitarsis*)], surroundings of Parvomay vill., along Strumeshnitsa river [Atanassov 1964 (as *M. barbarus varrialei*)], Petrich [Atanassov and Vasileva 1976 (as *M. rufitarsis romanus*)]; **Slavianka Mt.:** Petrovo vill. [Atanassov and Vasileva 1976 (as *M. rufitarsis romanus*)]; **Western Rhodopi Mts:** Asenovgrad (Forel 1892), Smilyan vill. (Smolyan) (Hlaváč et al. 2007); **Eastern Rhodopi Mts:** Dedets vill. (Zlatograd), Byal Izvor vill. (Arda), Momchilgrad, Madzharovo, between Dabovets and Kamilski dol vill. (Ivaylovgrad), Odrintsi vill. (Ivaylovgrad), Padalo vill. (Krumovgrad) (Lapeva-Gjonova 2004a), Daskalovo (Schlick-Steiner et al. 2006a); **Northern Black Sea coast:** Evksinograd palace [Atanassov 1936 (as *M. barbarus varrialei* and *M. rufitarsis*)], Balchik (Schlick-Steiner et al. 2006a); **Southern Black Sea coast:** Nesebar (Barrett 1970), Mandra lake (Burgas) [Atanassov and Vasileva 1976 (as *M. rufitarsis romanus*)].

Genus *Pheidole* Westwood, 1839

Pheidole pallidula (Nylander, 1849)

Records (Map 21): **Bulgaria** (Agosti and Collingwood 1987a, Csősz and Markó 2005, Atanassov and Dlusskij 1992); **Western Predbalkan:** Rachene river valley (Vasilev 1984); **Central Predbalkan:** Dermantsi vill. (Lukovit) [Atanassov 1934, 1936 (as *Ph. pallidula arenarum* var. *orientalis*)]; **Western Stara Planina Mts:** Lakatnik station [Atanassov 1934, 1936 (as *Ph. pallidula arenarum* var. *orientalis*)]; **Central Stara**

Planina Mts: Zhaltets peak [Atanassov 1934, 1936 (as *Ph. pallidula arenarum* var. *orientalis*)]; **Eastern Stara Planina Mts:** Sliven (Forel 1892); **Zemen Gorge:** Skakavitsa waterfall [Atanassov 1936 (as *Ph. pallidula arenarum* var. *orientalis*)]; **Podbalkan Basins:** Rose valley [Atanassov et al. 1955 (as *Ph. pallidula arenarum* var. *orientalis*)]; **Strandzha Mt.:** Ropotamo river (Atanassov 1934); **Dupnitsa Basin:** Dupnitsa (Forel 1892); **Rila Mt.:** Rila (Forel 1892); **Krupnik-Sandanski-Petrich Valley:** Kresna, Kresna gorge [Atanassov 1934, 1936 (as *Ph. pallidula arenarum* var. *orientalis*)]; west of Petrich [Atanassov 1964 (as *Ph. pallidula arenarum* var. *orientalis*)]; **Ograzhden Mt.** [Atanassov 1964 (as *Ph. pallidula arenarum* var. *orientalis*)]; **Belasitsa Mt.:** at the foot of Belasitsa Mt. [Atanassov 1964 (as *Ph. pallidula arenarum* var. *orientalis*)]; **Western Rhodopi Mts:** Asenovgrad (Forel 1892); **Eastern Rhodopi Mts:** Dedets vill. (Zlatograd), Malko Popovo vill. (Madzharovo), Madzharovo, between Dabovets and Kamilski dol vill. (Ivaylovgrad), between Odrintsi vill. and Svirachi vill. (Ivaylovgrad), Svirachi vill. (Ivaylovgrad), Padalo vill. (Krumovgrad) (Lapeva-Gjonova 2004a); **Northern Black Sea coast:** Evksinograd palace [Atanassov 1936 (as *Ph. pallidula arenarum* var. *orientalis*)], Kavarna (Markó and Csősz 2002); **Southern Black Sea coast:** Sozopol (Forel 1892), Burgas (Forel 1895), near Ropotamo river (Atanassov 1934).

Genus *Myrmecina* Curtis, 1829

Myrmecina graminicola (Latreille, 1802)

= *Myrmecina latreillei* Curtis, 1829

Records (Map 22): **Bulgaria** (Emery 1914, Agosti and Collingwood 1987a); **Western Predbalkan:** Belogradchik (Atanassov and Dlusskij 1992); **Sofia Basin:** Sofia, surroundings of Sofia (Lapeva-Gjonova and Atanasova 2004, Antonova 2005, Antonova and Penev 2006, 2008); **Plana Mt.:** Pasarel vill. (Vagalinski and Lapeva-Gjonova in press); **Thracian Lowland:** Svilengrad (Atanassov and Vasileva 1976, Atanassov and Dlusskij 1992, Hubenov et al. 1998); **Krupnik-Sandanski-Petrich Valley:** Sandanski (Atanassov and Vasileva 1976, Atanassov and Dlusskij 1992, Hubenov et al. 1998); **Pirin Mt.:** Mechkul vill. (Atanassov and Dlusskij 1992); **Western Rhodopi Mts:** Peshtera (Lapeva-Gjonova in press(a)); **Southern Black Sea coast:** Burgas [Forel 1895 (as *M. latreillei*)], Tsarevo (Atanassov and Vasileva 1976, Atanassov and Dlusskij 1992).

Genus *Crematogaster* Lund, 1831

Crematogaster auberti Emery, 1869

Records (Map 23): **Krupnik-Sandanski-Petrich Valley:** Kamenitsa vill. (Lapeva-Gjonova in press(b)).

Crematogaster schmidti (Mayr, 1853)

= *Cremastogaster scutellaris* var. *christowitchii* Forel, 1892

Records (Map 23): **Bulgaria** (Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992); **Western Stara Planina Mts:** Lakatnik station (Atanassov 1936); **Eastern Stara Planina Mts:** Sliven [Forel 1892 (as *C. scutellaris*)]; **Podbalkan Basins:** Rose valley (Atanassov et al. 1955); **Thracian Lowland:** Pazardzhik [Forel 1892 (as *C. scutellaris* var. *christotwitchii*)]; **Bakadzhik-Burgas district:** Aytos [Forel 1892 (as *C. scutellaris* var. *christotwitchii*)]; **Strandzha Mt.** (Antonova et al. in press): Papia peak [Atanassov 1934 (as *C. scutellaris* var. *christotwitchii*)]; **Belasitsa Mt.** (Atanassov 1964); **Krupnik-Sandanski-Petrich Valley:** west of Petrich, along Strumeshnitsa river (Atanassov 1964); **Slavianka Mt.:** St. Vrach – Petrovo vill. (Atanassov 1936); **Western Rhodopi Mts:** Asenovgrad [Forel 1892 (as *C. scutellaris* var. *christotwitchii*)], Dospat (Lapeva-Gjonova in press(a)); **Eastern Rhodopi Mts:** Zhelezino vill. (Ivaylovgrad), Madzharovo municipality, Malko Popovo vill. (Madzharovo), Malki Voden vill. (Madzharovo), between Dabovets and Kamilski dol vill. (Ivaylovgrad), Odrintsi vill. (Ivaylovgrad), between Odrintsi and Svirachi vill. (Ivaylovgrad), Kokiche vill. (Kardzhali), Meden buk vill. (Ivaylovgrad) (Lapeva-Gjonova 2004a); **Southern Black Sea coast:** Veselie vill. [Forel 1892 (as *C. scutellaris* var. *christotwitchii*)], Burgas [Forel 1895 (as *C. scutellaris*)], Rezovo [Atanassov 1934 (as *C. scutellaris* and *C. scutellaris* var. *christotwitchii*)].

Notes: According to Atanassov and Dlusskij (1992) the records of Forel (1892) and Atanassov (1934) for *Crematogaster scutellaris* should be refer to *Crematogaster schmidti.*

Crematogaster scutellaris (Olivier, 1792)

Records: Bulgaria (Agosti and Collingwood 1987a).

Notes: This species was omitted by Atanassov and Dlusskij (1992).

Crematogaster sordidula (Nylander, 1849)

Records (Map 23): **Bulgaria** (Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992, Csősz and Markó 2005); **Eastern Stara Planina Mts:** Sliven (Forel 1892); **Bakadzhik-Burgas district:** Aytos (Forel 1892); **Krupnik-Sandanski-Petrich Valley:** Petrich plain (Atanassov 1964); **Western Rhodopi Mts:** Asenovgrad (Forel 1892); **Eastern Rhodopi Mts:** Beli Plast vill. (Kardzhali), Madzharovo municipality, Malko Popovo vill. (Madzharovo), between Dabovets and Kamilski dol vill. (Ivaylovgrad), Svirachi vill. (Ivaylovgrad) (Lapeva-Gjonova 2004a); **Northern Black Sea coast:** Kavarna (Markó and Csősz 2002).

Genus *Monomorium* Mayr, 1855

Monomorium pharaonis (Linnaeus, 1758)

Records (Map 24): **Eastern Danubian Plain:** Ruse, Shumen (Atanassov and Dlusskij 1992); **Sofia Basin:** Sofia (Atanassov 1965, Atanassov and Dlusskij 1992); **Thracian Lowland:** Svilengrad (Atanassov 1965), Plovdiv (Atanassov and Dlusskij 1992); **Strandzha Mt.:** Malko Tarnovo (Atanassov and Dlusskij 1992); **Northern Black Sea coast:** Varna (Atanassov 1965, Atanassov and Dlusskij 1992), Obzor vill. (Atanassov and Dlusskij 1992); **Southern Black Sea coast:** Burgas, Tsarevo (Atanassov 1965, Atanassov and Dlusskij 1992), Sozopol, Ahtopol (Atanassov and Dlusskij 1992).

Genus *Solenopsis* Westwood, 1840

Solenopsis fugax (Latreille, 1798)

Records (Map 25): **Bulgaria** [Emery 1914, Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992 (as *Diplorhoptrum fugax*)]; **Western Predbalkan:** Rachene river valley [Vasilev 1984 (as *D. fugax*)]; **Central Predbalkan:** Dermantsi vill. (Lukovit) (Atanassov 1934); **Western Stara Planina Mts:** Milanovo vill. (Vratsa) (Atanassov 1934); **Sofia Basin:** Sofia [Forel 1892, Atanassov 1936, Antonova 2004, 2005, Lapeva-Gjonova and Atanasova 2004 (as *D. fugax*); Antonova and Penev 2006, 2008], surroundings of Sofia (Antonova and Penev 2006); **Vitosha Mt.** (Atanassov 1936, 1952): Dragalevtsi (Atanassov 1934); **Podbalkan Basins:** Rose valley (Atanassov et al. 1955); **Ihtimanska Sredna Gora Mts:** Benkovski peak (Atanassov 1936); **Lozenska Planina Mt.** (Vasilev and Evtimov 1973); **Osogovska Planina Mt.:** Hisarlaka (Kyustendil) (Atanassov 1936); **Krupnik-Sandanski-Petrich Valley:** west of Petrich, along Strumeshnitsa river (Atanassov 1964); **Western Rhodopi Mts:** Asenovgrad (Forel 1892), Peshtera (Atanassov 1934, Lapeva-Gjonova in press(a)); **Eastern Rhodopi Mts:** Zvezdel vill. (Momchilgrad), between Dabovets and Kamilski dol vill. (Ivaylovgrad), between Odrintsi and Svirachi vill. (Ivaylovgrad), Svirachi vill. (Lapeva-Gjonova 2004a); **Southern Black Sea coast:** Burgas (Forel 1895).

Genus *Formicoxenus* Mayr, 1855

Formicoxenus nitidulus (Nylander, 1846)

Records (Map 26): **Central Predbalkan:** Dermantsi vill. (Lukovit) (Atanassov 1936); **Stara Planina Mts** (Atanassov and Dlusskij 1992); **Western Stara Planina Mts:** Zgorigrad vill. (Vratsa) (Atanassov 1936); **Vitosha Mt.** (Atanassov and Dlusskij 1992): Knyazhevo (Csősz and Markó 2005); **Osogovska Planina Mt.:** Hisarlaka

(Atanassov 1936, Atanassov and Dlusskij 1992); **Belasitsa Mt.** (Atanassov and Vasileva 1976, Hubenov et al. 1998); **Slavianka Mt.** (Atanassov and Dlusskij 1992); **Rhodopi Mts** (Atanassov and Dlusskij 1992); **Western Rhodopi Mts:** Peshtera (Lapeva-Gjonova in press(a)).

Conservation Status: Vulnerable A2c (IUCN).

Genus *Harpagoxenus* Forel, 1893

Harpagoxenus sublaevis (Nylander, 1849)

Records (Map 27): **Slavianka Mt.:** Alibotush reserve (Antonova 2009).

Conservation Status: Vulnerable A2c (IUCN).

Genus *Leptothorax* Mayr, 1855

Leptothorax acervorum (Fabricius, 1793)

Records (Map 28): **Bulgaria** (Emery 1914, Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992); **Central Stara Planina Mts:** Bratanitsa peak (Atanassov 1936); **Vitosha Mt.** (Atanassov 1952); **Plana Mt.:** Tsiganka peak (Pasarel vill.), Alino vill. (Vagalinski and Lapeva-Gjonova in press); **Rila Mt.:** Rila monastery (Forel 1892); **Western Rhodopi Mts:** Rakitovo, Peshtera, Batak (Lapeva-Gjonova in press(a)).

Leptothorax muscorum (Nylander, 1846)

Records (Map 28): **Bulgaria** (Agosti and Collingwood 1987a); **Stara Planina Mts** (Atanassov and Dlusskij 1992); **Vitosha Mt.** (Atanassov 1952, Atanassov and Dlusskij 1992, Hubenov et al. 1998); **Rila Mt.** (Atanassov and Dlusskij 1992); **Slavianka Mt.:** Alibotush reserve (Antonova 2009); **Rhodopi Mts** (Atanassov and Dlusskij 1992).

Genus *Temnothorax* Mayr, 1861

Notes: Till recently *Temnothorax* was considered as a junior synonym of *Leptothorax*, but Bolton (2003) has divided the latter genus to two: *Leptothorax* (which includes the former subgenus *Leptothorax* s. str.) and *Temnothorax* (which includes, among others, the former subgenus *Myrafant* M. R. Smith). Therefore all authors before 2003 and some after this date have placed *Temnothorax* species in the genus *Leptothorax* (except of *T. recedens*).

Temnothorax affinis (Mayr, 1855)

Records (Map 29): **Bulgaria** (Emery 1914, Agosti and Collingwood 1987a); **Western Stara Planina Mts:** Chepan (Dragoman) (Borisova et al. 2005); **Eastern Stara Planina Mts** (Atanassov and Dlusskij 1992); **Sofia Basin:** Sofia (Forel 1892, Antonova 2005, Antonova and Penev 2006, 2008), surroundings of Sofia (Atanassov and Dlusskij 1992); **Lyulin Mt.** (Atanassov and Dlusskij 1992); **Vitosha Mt.** (Atanassov 1952, Atanassov and Dlusskij 1992); **Plana Mt.:** Bukov dol loc. (Pasarel vill.), Peyova buka hut (Pasarel vill.), Tsiganka peak (Pasarel vill.), Pasarel vill., Alino vill. (Vagalinski and Lapeva-Gjonova in press); **Belasitsa Mt.**, **Pirin Mt.**, **Slavianka Mt.** (Atanassov and Dlusskij 1992); **Rhodopi Mts** (Atanassov and Dlusskij 1992); **Eastern Rhodopi Mts:** Beli Plast vill. (Kardzhali), Zvezdel vill. (Momchilgrad), Zhelezino vill. (Ivaylovgrad), between Dabovets and Kamilski dol vill. (Ivaylovgrad) (Lapeva-Gjonova 2004a).

Temnothorax bulgaricus (Forel, 1892)

Records (Map 29): **Bulgaria** (Agosti and Collingwood 1987a); **Eastern Stara Planina Mts:** Sliven (Forel 1892, Atanassov and Dlusskij 1992); **Zemen Gorge:** Zemen station (Atanassov and Vasileva 1976), Zemen (Hubenov et al. 1998); **Krupnik-Sandanski-Petrich Valley:** Petrich (Atanassov and Dlusskij 1992); **Western Rhodopi Mts:** Asenovgrad (Atanassov and Dlusskij 1992); **Northern Black Sea coast:** Obzor vill. (Atanassov and Dlusskij 1992).

Temnothorax clypeatus (Mayr, 1853)

Records (Map 30): **Bulgaria** (Agosti and Collingwood 1987a); **Zemen Gorge:** Zemen district (Atanassov and Dlusskij 1992); **Lyulin Mt.** (Atanassov and Dlusskij 1992); **Plana Mt.:** Pasarel vill. (Vagalinski and Lapeva-Gjonova in press); **Osogovska Planina Mt.:** slopes of Osogovska Planina Mt. by Kyustendil (Atanassov and Dlusskij 1992); **Krupnik-Sandanski-Petrich Valley:** west of Petrich, near by Strumeshnitsa river, around Parvomay vill. (Atanassov 1964, Hubenov et al. 1998, Atanassov and Dlusskij 1992); **Belasitsa Mt.:** at the foot of Belasitsa Mt. (Atanassov and Dlusskij 1992); **Northern Black Sea coast:** Obzor vill. (Atanassov and Vasileva 1976, Hubenov et al. 1998).

Temnothorax corticalis (Schenck, 1852)

Records (Map 30): **Bulgaria** (Agosti and Collingwood 1987a); **Vitosha Mt.:** Dragalevtsi monastery (Atanassov and Dlusskij 1992); **Krupnik-Sandanski-Petrich Valley:**

west of Petrich, along Strumeshnitsa river (Atanassov 1964, Atanassov and Dlusskij 1992, Hubenov et al. 1998); **Northern Black Sea coast:** Balchik (Atanassov and Dlusskij 1992); **Southern Black Sea coast:** Tsarevo (Atanassov and Dlusskij 1992).

Temnothorax crassispinus (Karavaiev, 1926)

Records (Map 31): **Sofia Basin:** Sofia (Lapeva-Gjonova and Atanasova 2004, Antonova 2004); **Plana Mt.:** Pasarel vill., Bukov dol loc. (Pasarel vill.), Muhchel peak (Dolni okol vill.), Peyova buka hut (Pasarel vill.), Alino vill. (Vagalinski and Lapeva-Gjonova in press); **Western Rhodopi Mts:** Peshtera (Lapeva-Gjonova in press(a)); **Southern Bulgarian mountains:** [Seifert 1995 (as *Leptothorax nylanderi slavonicus*)].

Notes: For many years *T. crassispinus* was considered as a junior synonym of *T. nylanderi*, but Radchenko (2000) showed that it is a good species, distributed mainly in the Eastern Europe including Bulgaria, while *T. nylanderi* is mainly West European species. Nevertheless, we recently found *T. nylanderi* in parks in Sofia. Therefore although most of the records of *T. nylanderi* for Bulgaria from before 2000 should be *T. crassispinus*, some of them might include also "true" *T. nylanderi*, this question may be definitely resolved only after investigation of the correspondent material.

Temnothorax graecus (Forel, 1911)

Records (Map 31): **Central Stara Planina Mts:** Gabrovo monastery (Gabrovo) (Antonova, MIZ collection, det. A. Schultz, unpublished data).

Temnothorax interruptus (Schenck, 1852)

Records (Map 31): **Western Predbalkan:** Belogradchik (Atanassov and Dlusskij 1992); **Western Stara Planina Mts:** Berkovitsa (Atanassov and Dlusskij 1992); **Eastern Stara Planina Mts:** Kotel (Atanassov and Dlusskij 1992); **Plana Mt.:** Kokalyane monastery (Kokalyane vill.) (Vagalinski and Lapeva-Gjonova in press); **Krupnik-Sandanski-Petrich Valley:** Petrich (Atanassov and Dlusskij 1992); **Northern Black Sea coast:** Obzor vill., Balchik (Atanassov and Dlusskij 1992).

Temnothorax cf. *korbi* (Emery, 1924)

Records (Map 32): **Southern Black Sea coast:** Ahtopol (Antonova, MIZ collection, det. A. Schultz, unpublished data).

Temnothorax melanocephalus (Emery, 1870)

Records (Map 32): **Bulgaria** (Emery 1922, Agosti and Collingwood 1987a); **Krupnik-Sandanski-Petrich Valley:** Petrich (Atanassov and Dlusskij 1992); **Rila Mt.:** Borovets (Emery 1914).

Notes: Bolton (1995) and Bolton et al. (2006) erroneously considered *T. melanocephalus* as a junior synonym of *T. tuberum*, referring this synonymy to Casevitz-Weulersse (1990), but at the same time noted that Atanassov and Dlusskij (1992) considered *T. melanocephalus* as a good species. Since 1992 its status has not been formally changed by any subsequent authors and we consider it as a good species.

Temnothorax nadigi (Kutter, 1925)

Records (Map 32): **Western Rhodopi Mts:** Chervenata stena reserve (Dobrostan) (Czechowska et al. 1998).

Temnothorax nigriceps (Mayr, 1855)

Records: Bulgaria (Agosti and Collingwood 1987a).

Notes: This species was omitted by Atanassov and Dlusskij (1992).

Temnothorax nylanderi (Förster, 1850)

Records (Map 32) definitely belonging to *T. nylanderi*: **Sofia Basin:** Sofia (Antonova 2005, Antonova and Penev 2006, 2008); near Vladaya vill. (Antonova and Penev 2008); **Lozenska Planina Mt.:** near German monastery (Antonova and Penev 2008); **Strandzha Mt.** (Antonova et al. in press).

The following records of *T. nylanderi* most likely mainly belong to *T. crassispinus*, but might include also *T. nylanderi*: **Bulgaria** (Emery 1914, Agosti and Collingwood 1987a); **Western Predbalkan:** Belogradchik (Atanassov and Dlusskij 1992); **Western Stara Planina Mts:** Vratsa (Atanassov and Dlusskij 1992); **Sofia Basin:** Sofia (Forel 1892, Atanassov and Dlusskij 1992); **Krupnik-Sandanski-Petrich Valley:** Petrich (Atanassov and Dlusskij 1992); **Northern Black Sea coast:** Byala vill. (Varna), Balchik (Atanassov and Dlusskij 1992); **Southern Black Sea coast:** Burgas (Forel 1895).

Temnothorax parvulus (Schenck, 1852)

Records (Map 33): **Bulgaria** (Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992); **Western Stara Planina Mts:** Chepan Mt. (Dragoman) (Borisova et al. 2005);

Eastern Stara Planina Mts: Sliven (Forel 1892); **Vitosha Mt.:** Knyazhevo (Forel 1892); **Plana Mt.:** Bukov dol loc. (Pasarel vill.) (Vagalinski and Lapeva-Gjonova in press).

Temnothorax recedens (Nylander, 1856)

Records (Map 33): **Bulgaria** (Agosti and Collingwood 1987a); **Eastern Stara Planina Mts** (Atanassov and Dlusskij 1992): Sliven (Forel 1892, Dlussky and Soyunov 1988); **Bakadzhik-Burgas district:** Aytos (Atanassov and Dlusskij 1992); **Krupnik-Sandanski-Petrich Valley:** Kresna (Dlussky and Soyunov 1988, Atanassov and Dlusskij 1992); **Northern Black Sea coast:** Balchik, Kavarna, Batova river valley, Kaliakra, Obzor vill. (Atanassov and Dlusskij 1992); **Southern Black Sea coast:** Pomorie (Forel 1892, Atanassov and Dlusskij 1992), Burgas, Tsarevo, Rezovo (Atanassov and Dlusskij 1992).

Conservation Status: Lower Risk/least concern (IUCN).

Temnothorax saxonicus (Seifert, 1995)

Records (Map 34): **Bulgaria** (Seifert 1995); **Western Stara Planina Mts:** Tompsan (Seifert 2006); **Vitosha Mt.:** Chuypetlyovo (Seifert 2006); **Krupnik-Sandanski-Petrich Valley:** Kresna, Petrich (Seifert 2006); **Northern Black Sea coast:** Aladzha monastery (Seifert 2006).

Notes: Seifert (1995) described *T. saxonicus* as an eastern subspecies of *T. sordidulus*, but later he (Seifert 2006) raised it to the species rank.

Temnothorax semiruber (André, 1881)

= *Leptothorax rottenbergi* var. *balcanica* Santschi, 1909

Records (Map 34): **Bulgaria** (Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992); **Eastern Stara Planina Mts:** Sliven (Forel 1892); **Boboshevo-Simitli Valley:** Kocherinovo [Atanassov and Vasileva 1976 and Hubenov et al. 1998 (as *L. rottenbergi* var. *balcanica*)]; **Krupnik-Sandanski-Petrich Valley:** Kresna gorge [Atanassov 1936 (as *L. rottenbergi* var. *balcanica*)], Sandanski [Atanassov and Vasileva 1976 and Hubenov et al. 1998 (as *L. rottenbergi* var. *balcanica*)]; **Belasitsa Mt.:** slopes of Belasitsa Mt. [Atanassov 1964 (as *L. rottenbergi* var. *balcanica*)]; **Western Rhodopi Mts:** Asenovgrad (Forel 1892); **Eastern Rhodopi Mts:** Dedets vill. (Zlatograd), Byal Izvor vill. (Arda), Momchilgrad, Madzharovo (Lapeva-Gjonova 2004a).

***Temnothorax sordidulus* (Müller, 1923)**

Records (Map 34): **Western Predbalkan:** Cherven bryag (Seifert 2006); **Western Stara Planina Mts:** Lakatnik, Dragoman, Tri ushi, Tompsan (Seifert 2006).

***Temnothorax tauricus* Ruzsky, 1902**

Records (Map 35): **Bulgaria** (Radchenko 1994, 1995a); **Krupnik-Sandanski-Petrich Valley:** Petrich; **Western Rhodopi Mts:** *Bagnovski monastery* (=Bachkovski monastery) (materials at ZMMU, A. Radchenko).

***Temnothorax tuberum* (Fabricius, 1775)**

Records (Map 35): **Bulgaria** (Agosti and Collingwood 1987a); **Sofia Basin:** Sofia (Antonova 2005, Antonova and Penev 2006, 2008), surroundings of Sofia near Vladaya vill. (Antonova and Penev 2006, 2008); **Thracian Lowland:** Pazardzhik (Forel 1892); **Rila Mt**. (Atanassov and Dlusskij 1992): Elenin peak (Forel 1892); **Pirin Mt.**, **Rhodopi Mts** (Atanassov and Dlusskij 1992).

***Temnothorax unifasciatus* (Latreille, 1798)**

Leptothorax tuberum r. *unifasciatus* var. *unifasciatotuberum* Forel, 1892 (*nomen nudum* and unavailable name)
Leptothorax tuberum r. *unifasciatus* var. *interruptotuberum* Forel, 1892 (*nomen nudum* and unavailable name)

Records (Map 35): **Bulgaria** (Emery 1914, Agosti and Collingwood 1987a); **Central Predbalkan:** Dermantsi vill. (Lukovit) (Atanassov 1936); **Stara Planina Mts** (Atanassov and Dlusskij 1992); **Eastern Stara Planina Mts:** Sliven (Forel 1892); **Sofia Basin:** Sofia (Forel 1892, Antonova 2004, 2005, Lapeva-Gjonova and Atanasova 2004, Antonova and Penev 2006, 2008), surroundings of Sofia (Antonova and Penev 2006); **Vitosha Mt.** (Atanassov 1952, Atanassov and Dlusskij 1992); **Plana Mt.:** Alino vill. (Vagalinski and Lapeva-Gjonova in press); **Lozenska Planina Mt.:** near German monastery and north of Pasarel vill. (Antonova and Penev 2008); **Strandzha Mt.** (Antonova et al. in press); **Belasitsa Mt.** (Atanassov 1964, Atanassov and Dlusskij 1992, Hubenov et al. 1998); **Rila Mt.** (Forel 1892, Atanassov and Dlusskij 1992); **Rhodopi Mts** (Atanassov and Dlusskij 1992); **Western Rhodopi Mts:** Peshtera (Lapeva-Gjonova in press(a)); **Southern Black Sea coast:** Burgas (Forel 1892).

Genus *Chalepoxenus* Menozzi, 1923

Chalepoxenus muellerianus (Finzi, 1922)

Records (Map 27): **Bulgaria** (Buschinger and Douwes 1993); **Western Rhodopi Mts:** Dobrostan hill (Buschinger et al. 1988).

Notes: This species is not included in Fauna of Bulgaria (Atanassov and Dlusskij 1992).

Conservation Status: Vulnerable D2 (IUCN).

Genus *Myrmoxenus* Ruzsky, 1902

Myrmoxenus gordiagini Ruzsky, 1902

Records (Map 27): **Western Predbalkan:** Reselets vill. (Cherven Bryag) (Buschinger and Douwes 1993).

Conservation Status: Vulnerable D2 (IUCN).

Myrmoxenus ravouxi (André, 1896)

Records (Map 27): **Krupnik-Sandanski-Petrich Valley:** Kresna [Buschinger and Douwes 1993 (as *Epimyrma ravouxi*)].

Conservation Status: Vulnerable D2 (IUCN).

Genus *Cardiocondyla* Emery, 1869

Cardiocondyla bulgarica Forel, 1892

Records (Map 36): **Bulgaria** [Agosti and Collingwood 1987a, Radchenko 1995b (as junior synonym of *C. elegans*)]; **Pirin Mt.:** Rozhen (Seifert 2003b); **Northern Black Sea coast:** Obzor vill. (Atanassov and Dlusskij 1992); **Southern Black Sea coast:** Pomorie, Sozopol (Forel 1892, Atanassov and Dlusskij 1992, Seifert 2003b), Arkutino (Atanassov and Dlusskij 1992).

Cardiocondyla elegans Emery, 1869

Records (Map 36): **Krupnik-Sandanski-Petrich Valley:** Sandanski (Atanassov and Dlusskij 1992); **Pirin Mt.:** Mechkul vill. (Simitli) (Atanassov and Dlusskij 1992), Melnik (Seifert 2003b); **Northern Black Sea coast:** Kavarna, Byala, the mouth of Batova river (Atanassov and Dlusskij 1992); **Southern Black Sea coast:** Nesebar, Primorsko (Atanassov and Dlusskij 1992).

Cardiocondyla nigra Forel, 1905

Records: Bulgaria [Agosti and Collingwood 1987a, Radchenko 1995b (as junior synonym of *C. batesii* Forel)].

Notes: Agosti and Collingwood (1987a) recorded *C. nigra* for Bulgaria and Turkey (Thrace), and Radchenko (1995b) repeated this record (under the name *C. batesii* that he considered as a senior synonym of *C. nigra*). However, Seifert (2003b) regarded *C. batesii* and *C. nigra* as separate species. According to him, the first species is distributed in Iberian Peninsula and NW Africa [Agosti and Collingwood (1987a) recorded it also for Greece], and the latter – in the Iberian Peninsula, North Africa and Turkey. Most probably, both species have distributions that include Mediterranean areas and are absent from Bulgaria; their occurrence in this country needs confirmation.

Cardiocondyla stambuloffii Forel, 1892

Records (Map 36): **Bulgaria** (Agosti and Collingwood 1987a); **Eastern Stara Planina Mts:** Sliven (Hubenov et al. 1998); **Northern Black Sea coast:** Albena, St. St. Konstantin and Elena, Varna, Obzor vill. (Atanassov and Dlusskij 1992); **Southern Black Sea coast:** Burgas (Forel 1892, Pisarski 1962, Atanassov and Dlusskij 1992, Radchenko 1995b, Hubenov et al. 1998, Seifert 2003b), Pomorie, Sozopol (Forel 1892, Atanassov and Dlusskij 1992, Seifert 2003b), Tsarevo (Atanassov and Dlusskij 1992, Hubenov et al. 1998), Arkutino, Ahtopol (Atanassov and Dlusskij 1992).

Genus *Anergates* Forel, 1874

Anergates atratulus (Schenck, 1852)

Records (Map 37): **Western Stara Planina Mts**, **Vitosha Mt.**, **Osogovska Planina Mt.**, **Rhodopi Mts**, **Northern Black Sea coast**, **Southern Black Sea coast** (Atanassov and Dlusskij 1992).

Conservation Status: Vulnerable D2 (IUCN).

Genus *Tetramorium* Mayr, 1855

Tetramorium caespitum (Linnaeus, 1758)

Records (Map 38): **Bulgaria** (Emery 1914, Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992); **Western Predbalkan:** Rachene river valley (Vasilev 1984); **Central Predbalkan:** Dermantsi vill. (Lukovit) (Atanassov 1934, 1936); **Western Stara Planina Mts:** Vrattsata loc., Milanovo vill. (Atanassov 1934), Lakatnik station (Atan-

assov 1936), Chepan Mt. (Dragoman) (Borisova et al. 2005); **Central Stara Planina Mts:** Teteven (Atanassov 1934), Tsarichina peak (Atanassov 1936); **Eastern Stara Planina Mts:** Sliven (Forel 1892); **Zemen Gorge:** Skakavitsa vill., Zemen (Atanassov 1936), Zemen gorge (Lapeva-Gjonova 2004b); **Sofia Basin:** Boyana (Atanassov 1934); Pancharevo vill. (Atanassov 1936), Sofia (Forel 1892, Lapeva-Gjonova and Atanasova 2004, Antonova 2005, Antonova and Penev 2006, 2008), surroundings of Sofia near Vladaya vill. (Atanasov 1936, Antonova and Penev 2006, 2008); **Lyulin Mt.:** Mihaylovo district (Atanassov 1936); **Vitosha Mt.** (Atanassov 1952); **Plana Mt.:** Plana vill., Pasarel vill., Richov well loc. (Dolni okol vill.), Tsiganka peak (Pasarel vill.), Yovichina mogila peak (Popovyane vill.) (Vagalinski and Lapeva-Gjonova in press); **Podbalkan Basins:** Rose valley (Atanassov et al. 1955); **Lozenska Planina Mt.** (Vasilev and Evtimov 1973): German monastery (Atanassov 1936, Antonova and Penev 2008), north of Pasarel vill. (Antonova and Penev 2008); **Thracian Lowland:** Pazardzhik (Forel 1892, Atanassov 1936), Krichim (Atanassov 1936); **Bakadzhik-Burgas district:** Aytos (Forel 1892); **Strandzha Mt.** (Antonova et al. in press); **Ograzhden Mt.** (Atanassov 1964); **Belasitsa Mt.** (Atanassov 1964); **Krupnik-Sandanski-Petrich Valley:** west of Petrich (Atanassov 1964); **Dupnitsa Basin:** Dupnitsa; **Rila Mt.**: Rilska river valley (Forel 1892), Kostenets, Borovets (Atanassov 1936); **Slavianka Mt.** (Atanassov 1936); **Mesta Valley:** Petrelik vill. (Gotse Delchev) (Lapeva-Gjonova 2004b); **Western Rhodopi Mts:** Asenovgrad (Forel 1892), Peshtera (Atanassov 1936, Lapeva-Gjonova in press(a)), Batak, Devin, Smolyan, Rakitovo, Velingrad, Dospat (Lapeva-Gjonova in press(a)); **Eastern Rhodopi Mts:** Dedets vill. (Zlatograd), Byal Izvor vill. (Arda), Beli Plast vill. (Kardzhali), Kokiche vill. (Kardzhali), Momchilgrad, Madzharovo, Malko Popovo vill. (Madzharovo), between Dabovetz and Kamilski dol vill. (Ivaylovgrad), between Odrintsi and Svirachi vill. (Ivaylovgrad), Svirachi vill. (Ivaylovgrad) (Lapeva-Gjonova 2004a); **Southern Black Sea coast:** Pomorie, Burgas, Sozopol, Veselie vill. (Forel 1892), Maslen nos, Mandra lake (Atanassov 1934), Nesebar (Barrett 1970).

Notes: According to Schlick-Steiner et al. (2006b) the *Tetramorium caespitum/impurum* complex comprises seven Palaearctic species. The taxonomy of the complex is not properly resolved and we assume that there are several cryptic species related to *T. caespitum* in Bulgaria.

Tetramorium chefketi Forel, 1911

= *Tetramorium taurocaucasicum* Arnoldi, 1968

= *Tetramorium forte* Forel, 1904 (part., material from Balkans, East Europe, Caucasus and Middle Asia)

Tetramorium moravicum: Agosti and Collingwood, 1987a, b, misidentification, *nec* Kratochvil, 1941

Recorded as *Tetramorium forte*: Agosti and Collingwood 1987a; Atanassov and Dlusskij 1992; Lapeva-Gjonova 2004a; Lapeva-Gjonova and Atanasova 2004; Antonova 2005; Borisova et al. 2005

Records (Map 39): **Bulgaria** (Agosti and Collingwood 1987a); **Eastern Danubian Plain:** Ludogorie-Dobrudzha district (Atanassov and Dlusskij 1992); **Stara Planina Mts** (Atanassov and Dlusskij 1992); **Western Stara Planina Mts:** Chepan Mt. (Dragoman) (Borisova et al. 2005); **Sofia Basin:** Sofia [Lapeva-Gjonova and Atanasova 2004 and Antonova 2005 (as *T. forte*), Antonova and Penev 2006, 2008], surroundings of Sofia (Antonova and Penev 2006); **Vitosha Mt.** (Atanassov 1952, Atanassov and Dlusskij 1992); **Lozenska Planina Mt.**: near German monastery (Antonova and Penev 2008); **Thracian Lowland:** Harmanli [Atanassov and Vasileva 1976 (as *T. taurocaucasicum*)]; **Strandzha Mt.** (Atanassov and Dlusskij 1992, Antonova et al. in press); **Belasitsa Mt.** (Atanassov and Dlusskij 1992); **Boboshevo-Simitli Valley:** Kocherinovo, Blagoevgrad (Csősz et al. 2007); **Pirin Mt.** (Atanassov and Dlusskij 1992); **Rhodopi Mts** (Atanassov and Dlusskij 1992); **Eastern Rhodopi Mts:** Kokiche vill. (Kardzhali), Madzharovo municipality, Byal Izvor vill. (Arda), Beli Plast vill. (Kardzhali), Malko Popovo vill. (Madzharovo), between Dabovets and Kamilski dol vill. (Ivaylovgrad), between Odrintsi vill. and Svirachi vill. (Ivaylovgrad), Svirachi vill. (Lapeva-Gjonova 2004a); **Southern Black Sea coast:** Primorsko [Atanassov and Vasileva 1976, Hubenov et al. 1998 (as *T. taurocaucasicum*)], Maslen nos [Atanassov and Vasileva 1976 (as *T. taurocaucasicum*)], Burgas (Csősz et al. 2007).

Notes: Agosti and Collingwood (1987a) recorded *T. forte* and *T. moravicum* from Bulgaria, but Atanassov and Dlusskij (1992) treated *T. moravicum*, as well as *T. taurocaucasicum*, as junior synonyms of *T. forte*. The complicate taxonomic history of this species was resolved recently by Csősz et al. 2007 (for some more details see also Radchenko et al. 1998, Czechowski et al. 2002, Güsten et al. 2006).

Tetramorium diomedeum Emery, 1908

Record (Map 39): **Southern Black Sea coast:** Ahtopol (Csősz and Schulz 2010).

Tetramorium ferox Ruzsky, 1903

Records (Map 39): **Bulgaria** (Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992); **Podbalkan Basins:** Kalofer (Atanassov and Vasileva 1976); **Krupnik-Sandanski-Petrich Valley:** Sandanski (Atanassov and Vasileva 1976); **Western Rhodopi Mts:** Smilyan vill. (Hlaváč et al. 2007); **Eastern Rhodopi Mts:** Kardzhali (Csősz and Schulz 2010); **Southern Black Sea coast:** Dolno Ezerovo (Burgas) (Csősz and Schulz 2010).

Tetramorium hungaricum (Röszler, 1935)

Records (Map 40): **Bulgaria** (Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992); **Central Predbalkan:** Dermantsi vill. (Lukovit) [Atanassov 1936

(as *T. caespitum semilaeve*)]; **Sofia Basin:** Sofia [Lapeva-Gjonova and Atanasova 2004 (as *T. semilaeve*), Antonova 2005, Antonova and Penev 2006, 2008]; **Plana Mt.:** Kokalyane vill. (Steiner et al. 2005); **Belasitsa Mt.:** at the foot of Belasitsa Mt. [Atanassov 1964 (as *T. caespitum semilaeve*)]; **Krupnik-Sandanski-Petrich Valley:** Kresna [Atanassov 1936 (as *T. caespitum semilaeve*)], around Mitino vill. [Atanassov 1964 (as *T. caespitum semilaeve*)]; Sandanski (Csősz and Markó 2004), Rupite (Steiner et al. 2005); **Eastern Rhodopi Mts:** Byal Izvor vill. (Arda), Zhelezino vill. (Ivaylovgrad), between Odrintsi vill. and Svirachi vill. (Ivaylovgrad) [Lapeva-Gjonova 2004a (as *T. semilaeve*)]; **Northern Black Sea coast:** Varna [Csősz and Markó 2004 (as *T. semilaeve*)].

Notes: This species, primarily described as a subspecies of *T. caespitum*, was raised to species rank by Röszler (1951), but this name was then forgotten for many years, until Csősz and Markó (2004) redescribed it. The latter authors considered *T. hungaricum* as a Ponto-Caspian or Balkan element.

Tetramorium moravicum Kratochvil, 1941

Records (Map 40): **Bulgaria** (Csősz and Schulz 2010); **Sofia Basin:** Sofia (Antonova and Penev 2006); **Plana Mt.:** Kokalyane vill. (Steiner et al. 2005), Peyova buka hut (Pasarel vill.) (Vagalinski and Lapeva-Gjonova in press); **Lozenska Planina Mt.:** near German monastery (Antonova and Penev 2008); **Strandzha Mt.:** Malko Tarnovo (Csősz et al. 2007); **Boboshevo-Simitli Valley:** Blagoevgrad (Csősz et al. 2007); **Western Rhodopi Mts:** Dospat (Lapeva-Gjonova in press(a)).

Genus *Strongylognathus* Mayr, 1853

Strongylognathus kratochvili Silhavy, 1937

= *Strongylognathus bulgaricus* Pisarski, 1966 (see Notes below).

Records (Map 41): **Central Predbalkan:** Veliko Tarnovo (Viehmeyer 1922), Preobrazhenski monastery (10 km by Veliko Tarnovo), Dryanovo (Atanassov and Dlusskij 1992); **Eastern Predbalkan:** Veliki Preslav (Atanassov and Dlusskij 1992).

Notes: Viehmeyer (1922) described *S. huberi rehbinderi* var. *bulgarica* from Bulgaria, but this name is unavailable (quadrinomen). Later Pisarski (1966) proposed the first available name for this form (*Strongylognathus rehbinderi bulgaricus*) and considered *S. kratochvili* as its junior synonym. Nevertheless, based on the International Code of Zoological Nomenclature (1999) the author of *S. bulgaricus* is Pisarski (1966), thus the name *S. kratochvili* has priority. Atanassov and Dlusskij (1992) recorded this species as *S. bulgaricus*.

Conservation Status: Vulnerable D2 (IUCN).

***Strongylognathus testaceus* (Schenck, 1852)**

Records (Map 41): **Bulgaria** (Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992); **Krupnik-Sandanski-Petrich Valley:** Kozhuh Mt. (Atanassov 1964); **Belasitsa Mt.** (Atanassov 1964, Hubenov et al. 1998); **Eastern Rhodopi Mts:** Dedets vill. (Zlatograd) (Lapeva-Gjonova 2004a); **Southern Black Sea coast:** Ahtopol (Atanassov and Vasileva 1976).

Subfamily Dolichoderinae

Genus *Dolichoderus* Lund, 1831

***Dolichoderus quadripunctatus* (Linnaeus, 1771)**

Records (Map 42): **Bulgaria** (Agosti and Collingwood 1987a); **Central Predbalkan:** Dermantsi vill. (Lukovit) (Atanassov 1936); **Sofia Basin:** Sofia [Atanassov and Dlusskij 1992, Lapeva-Gjonova and Atanasova 2004 (as *Hypoclinea quadripunctata*), Antonova 2005, Antonova and Penev 2006, 2008], surroundings of Sofia near Vladaya vill. (Antonova and Penev 2006, 2008); **Plana Mt.:** Pasarel vill. (Vagalinski and Lapeva-Gjonova in press); **Bakadzhik-Burgas district:** Aytos (Forel 1892); **Strandzha Mt.** (Antonova et al. in press): Malko Tarnovo [Atanassov and Dlusskij 1992 (as *Hypoclinea quadripunctata*)]; **Southwestern Bulgaria** [Atanassov and Dlusskij 1992 (as *Hypoclinea quadripunctata*)]; **Belasitsa Mt.** (Atanassov 1964, Hubenov et al. 1998); **Krupnik-Sandanski-Petrich Valley:** Petrich plain (Atanassov 1964); **Rila Mt.** (Forel 1892); **Western Rhodopi Mts:** Asenovgrad (Forel 1892); **Eastern Rhodopi Mts:** Madzharovo (Lapeva-Gjonova 2004a); **Southern Black Sea coast:** Veselie vill. (Forel 1892).

Genus *Liometopum* Mayr, 1861

***Liometopum microcephalum* (Panzer, 1798)**

Records (Map 43): **Bulgaria** (Agosti and Collingwood 1987a); **Western Danubian Plain:** Sadovets vill. (Lukovit) (Atanassov 1934), Lukovit (Del Toro et al. 2009); **Eastern Danubian Plain:** Ludogorie-Dobrudzha district (Atanassov 1957, Atanassov and Dlusskij 1992); **Central Predbalkan:** Dermantsi vill. (Lukovit) (Atanassov 1934, 1936, 1957); **Stara Planina Mts** (Atanassov 1957, Atanassov and Dlusskij 1992); **Central Stara Planina Mts:** Ribaritsa vill. (Atanassov 1936); **Eastern Stara Planina Mts:** Sliven (Forel 1892); **Podbalkan Basins:** Rose valley (Kazanlak) (Atanassov 1957); **Sredna gora Mts** (Atanassov 1957, Atanassov and Dlusskij 1992); **Thracian Lowland:** Pazardzhik (Forel 1892), Krichim (Atanassov 1936); **Bakadzhik-Burgas district:** Aytos (Forel 1892); **Strandzha Mt.** (Atanassov and Dlusskij 1992, Antonova et al. in

press); **Belasitsa Mt.** (Atanassov 1957, 1964, Atanassov and Dlusskij 1992); **Krupnik-Sandanski-Petrich Valley:** Petrich plain, along Strumeshnitsa river (Atanassov 1964); **Rila Mt.** (Atanassov 1957, Atanassov and Dlusskij 1992): Rila (Forel 1892, Del Toro et al. 2009); **Pirin Mt.** (Atanassov 1957, Atanassov and Dlusskij 1992); **Rhodopi Mts** (Atanassov 1957, Atanassov and Dlusskij 1992); **Western Rhodopi Mts:** Dospat (Lapeva-Gjonova in press(a)); **Eastern Rhodopi Mts:** Pastrook vill. (Ivaylovgrad) (Lapeva-Gjonova 2004a); **Southern Black Sea coast:** Sozopol, Veselie vill. (Forel 1892).

Genus *Tapinoma* Förster, 1850

Tapinoma erraticum (Latreille, 1798)

Records (Map 44): **Bulgaria** [Emery 1914 (as *T. erraticum nigerrimum*), Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992]; **Western Predbalkan:** Rachene river valley (Vasilev 1984); **Western Stara Planina Mts:** Chepan Mt. (Dragoman) (Borisova et al. 2005); **Central Stara Planina Mts:** Vezhen hut (Atanassov 1936); **Eastern Stara Planina Mts:** Sliven (Forel 1892); **Sofia Basin:** Sofia (Lapeva-Gjonova and Atanasova 2004, Antonova 2005, Antonova and Penev 2006, 2008), surroundings of Sofia near Vladaya village (Antonova and Penev 2006, 2008); **Vitosha Mt.** (Atanassov 1952); **Plana Mt.:** Plana vill., Tsiganka peak (Pasarel vill.), Vrabnitsa loc. (Dolni okol vill.), Turmachka mahala (Plana vill.), Krasta peak (Dolni okol vill.), Pasarel vill., Alino vill. (Vagalinski and Lapeva-Gjonova in press); **Lozenska Planina Mt.** (Vasilev and Evtimov 1973); **Strandzha Mt.** (Antonova et al. in press); **Dupnitsa Basin:** Dupnitsa (Forel 1892); **Belasitsa Mt.** (Atanassov 1964); **Krupnik-Sandanski-Petrich Valley:** along Strumeshnitsa river, Kozhuh Mt. [Atanassov 1964 and Hubenov et al. 1998 (as *T. erraticum nigerrimum*)]; **Rila Mt.:** Rilska river valley (Forel 1892); **Pirin Mt.**, **Rhodopi Mts** (Seifert 1984); **Western Rhodopi Mts:** Chepelare, Rakitovo, Batak, Velingrad, Peshtera (Lapeva-Gjonova in press(a)), Radilovo vill. (Atanassov 1936); **Eastern Rhodopi Mts:** Byal Izvor vill. (Arda), Beli Plast vill. (Kardzhali), Momchilgrad, Madzharovo municipality, between Odrintsi and Svirachi vill. (Ivaylovgrad), Senoklas vill. (Madzharovo) (Lapeva-Gjonova 2004a); **Black Sea coast** (Seifert 1984); **Northern Black Sea coast:** Evksinograd palace (Atanassov 1936); **Southern Black Sea coast:** Pomorie, Sozopol (Forel 1892).

Tapinoma madeirense Forel, 1895

= *Tapinoma ambiguum* Emery, 1925

Records (Map 44): **Bulgaria** (Czechowski et al. 2002); **Plana Mt.:** Plana vill. (Vagalinski and Lapeva-Gjonova in press); **Pirin Mt.**, **Rhodopi Mts**, **Black Sea coast** (Seifert 1984).

Notes: Until recently all authors considered this species to be *T. ambiguum*, but Wetterer et al. (2007) synonymised it with *T. madeirense*.

Genus *Bothriomyrmex* Emery, 1869

Bothriomyrmex communistus Santschi, 1919

Records (Map 45): **Strandzha Mt.:** Malko Tarnovo (Atanassov and Dlusskij 1992); **Krupnik-Sandanski-Petrich Valley:** west of Petrich (Atanassov 1964, Atanassov and Dlusskij 1992), Petrich (Hubenov et al. 1998), Sandanski (Atanassov and Dlusskij 1992).

Bothriomyrmex gibbus Soudek, 1925

Records (Map 45): **Western Predbalkan:** Rachene river valley (Vasilev 1984).

Notes: *B. gibbus* was not recorded for Bulgaria by Atanassov and Dlusskij (1992), and since 1984 no records of this species have been confirmed. However, based on the known distribution, the presence of this species in Bulgaria is quite probable.

Bothriomyrmex menozzii Emery, 1925

Records (Map 45): **Bulgaria** (Csősz and Markó 2005); **Northern Black Sea coast:** Kavarna (Markó and Csősz 2002).

Bothriomyrmex meridionalis (Roger, 1863)

Records (Map 45): **Krupnik-Sandanski-Petrich Valley:** west of Petrich (Atanassov 1964, Hubenov et al. 1998); **Eastern Rhodopi Mts:** Madzharovo (Lapeva-Gjonova 2004a).

Genus *Linepithema* Mayr, 1866

Linepithema humile (Mayr, 1868)

Records (Map 46): **Sofia Basin:** Sofia; **Northern Black Sea coast:** Varna; **Southern Black Sea coast:** Burgas [Atanassov and Dlusskij 1992 (all as *Iridomyrmex humilis*)].

Subfamily Formicinae

Genus *Plagiolepis* Mayr, 1861

Plagiolepis pygmaea (Latreille, 1798)

Records (Map 47): **Bulgaria** (Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992); **Western Stara Planina Mts:** Chepan Mt. (Dragoman) (Borisova et al. 2005); **Eastern Stara Planina Mts:** Sliven (Forel 1892); **Sofia Basin:** Sofia (Forel 1892, Antonova 2005, Antonova and Penev 2006, 2008), the surroundings of Sofia (Antonova and Penev 2006); **Vitosha Mt.** (Atanassov 1952); **Lozenska Planina Mt.** (Vasilev and Evtimov 1973); **Bakadzhik-Burgas district:** Aytos (Forel 1892); **Strandzha Mt.** (Atanassov 1936, Antonova et al. in press); **Osogovska Planina Mt.:** Hisarlaka (Atanassov 1936); **Dupnitsa Basin:** Dupnitsa (Forel 1892); **Eastern Rhodopi Mts:** Dedets vill. (Zlatograd), Byal Izvor vill. (Ardino), Momchilgrad, Beli Plast vill. (Kardzhali), Malko Popovo vill. (Madzharovo), Madzharovo, Zvezdel vill. (Momchilgrad), Zhelezino vill. (Ivaylovgrad), between Odrintsi vill. and Svirachi vill. (Ivaylovgrad), between Dabovets vill. and Kamilski dol vill. (Ivaylovgrad), Svirachi vill. (Ivaylovgrad) (Lapeva-Gjonova 2004a); **Southern Black Sea coast:** Burgas, Veselie vill. (Forel 1892).

Plagiolepis taurica Santschi, 1920

= *Plagiolepis vindobonensis* Lomnicki, 1925

All authors before 2000 recorded it as *P. vindobonensis*.

Records (Map 47): **Bulgaria** (Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992); **Western Predbalkan:** Rachene river valley (Vasilev 1984); **Western Stara Planina Mts:** Chepan (Dragoman) (Borisova et al. 2005); **Sofia Basin:** the surroundings of Sofia (Antonova and Penev 2006); **Plana Mt.:** Bukov dol loc. (Pasarel vill.) (Vagalinski and Lapeva-Gjonova in press); **Lozenska Planina Mt.:** north of Pasarel vill. (Antonova and Penev 2008); **Ograzhden Mt., Belasitsa Mt.** (Atanassov 1964); **Krupnik-Sandanski-Petrich Valley:** Petrich plain, Marino pole vill., Mitino vill. (Atanassov 1964); **Western Rhodopi Mt.:** Peshtera, Batak (Lapeva-Gjonova in press(a)).

Genus *Lepisiota* Santschi, 1926

Lepisiota frauenfeldi (Mayr, 1855)

All authors recorded it as *Acantholepis frauenfeldi*.

Records (Map 48): **Bulgaria** (Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992); **Belasitsa Mt.** (Atanassov 1964); **Krupnik-Sandanski-Petrich Valley:** Kresna (Atanassov 1936); **Eastern Rhodopi Mt.:** Svirachi vill. (Ivaylovgrad) (Lapeva-Gjonova 2004a).

Lepisiota splendens (Karavaiev, 1912)

Records: Bulgaria [Agosti and Collingwood 1987a (as *Acantholepis splendens*)].
Notes: This species was omitted by Atanassov and Dlusskij (1992).

Genus *Prenolepis* Mayr, 1861

Prenolepis nitens (Mayr, 1853)

Records (Map 49): **Bulgaria** (Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992); **Sofia Basin:** Sofia (Antonova 2005, Antonova and Penev 2006, 2008); **Podbalkan Basins:** Rose valley (Atanassov et al. 1955); **Strandzha Mt.** (Antonova et al. in press): Malko Tarnovo (Atanassov and Vasileva 1976, Hubenov et al. 1998); **Krupnik-Sandanski-Petrich Valley:** the valley of Luda Mara river (Atanassov 1964); **Belasitsa Mt.** (Atanassov 1964); **Western Rhodopi Mts:** Radilovo vill. (Peshtera) (Atanassov 1936), Smolyan (Lapeva-Gjonova in press(a)); **Eastern Rhodopi Mts:** Kokiche vill. (Kardzhali) (Lapeva-Gjonova 2004a).

Genus *Lasius* Fabricius, 1804

Lasius alienus (Förster, 1850)

Records (Map 50): **Bulgaria** (Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992, Seifert 1992); **Western Predbalkan:** Rachene river valley (Vasilev 1984); **Western Stara Planina Mts:** Lakatnik station (Vratsa district) (Atanassov 1936); **Konyavska Planina Mt.:** Uglyartsi vill. (Lapeva-Gjonova 2004b); **Sofia Basin:** Sofia (Forel 1892, Lapeva-Gjonova and Atanasova 2004, Antonova 2004, 2005, Antonova and Penev 2006, Hlaváč et al. 2007), the surroundings of Sofia near Vladaya vill. (Antonova and Penev 2006, 2008); **Vitosha Mt.** (Atanassov 1936, 1952, Hlaváč et al. 2007): Knyazhevo (Forel 1892); **Plana Mt.:** Pasarel vill. (Hlaváč et al. 2007, Vagalinski and Lapeva-Gjonova in press); Tsiganka peak (Pasarel vill.), Bukov dol loc. (Pasarel vill.), Plana vill., Peyova buka hut (Pasarel vill.), Alino vill. (Vagalinski and Lapeva-Gjonova in press); **Lozenska Planina Mt.** (Vasilev and Evtimov 1973): near German monastery (Antonova and Penev 2008); **Bakadzhik-Burgas district:** Aytos (Forel 1892); **Strandzha Mt.** (Antonova et al. in press); **Krupnik-Sandanski-**

Petrich Valley: along Strumeshnitsa river (Atanassov 1964); **Belasitsa Mt.** (Atanassov 1964); **Rila Mt.:** Rila monastery, the valley of Rilska river (Forel 1892); **Western Rhodopi Mts:** Chepintsi vill., Arda vill., Koshnitsa vill. (Hlaváč et al. 2007), Dospat, Smolyan, Rakitovo, Velingrad, Chepelare (Lapeva-Gjonova in press(a)); **Eastern Rhodopi Mts:** Kokiche vill. (Kardzhali), Dedets vill. (Zlatograd), Dyadovtsi vill. (Ardino), Madzharovo, Zvezdel vill. (Momchilgrad), between Dabovets vill. and Kamilski dol vill. (Ivaylovgrad), between Odrintsi vill. and Svirachi vill. (Ivaylovgrad), Svirachi vill. (Ivaylovgrad), Zhelezino vill. (Ivaylovgrad), Meden buk vill. (Ivaylovgrad) (Lapeva-Gjonova 2004a); **Northern Black Sea coast:** Evksinograd palace (Atanassov 1936); **Southern Black Sea coast:** Veselie vill. (Forel 1892).

Notes: Seifert (1992) has divided the former "*L. alienus*" into several species, three of which are found in Bulgaria: *L. alienus*, *L. paralienus* and *L. psammophilus*. Consequently, records of *L. alienus* in all papers before 1992 may refer to any of these species.

Lasius balcanicus Seifert, 1988

Records (Map 50): **Sofia Basin:** Sofia (Antonova and Penev 2006, 2008); **Plana Mt.:** Bukov dol loc. (Pasarel vill.), Peyova buka hut (Pasarel vill.) (Vagalinski and Lapeva-Gjonova in press); **Pirin Mt.:** Rozhen (Seifert 1988b); **Western Rhodopi Mts:** Dospat (Lapeva-Gjonova in press(a)); **Northern Black Sea coast:** Obzor vill. (Seifert 1988b).

Notes: This species was omitted by Atanassov and Dlusskij (1992).

Lasius bicornis (Förster, 1850)

Records (Map 51): **Bulgaria** (Seifert 1988b, Atanassov and Dlusskij 1992); **Lozenska Planina Mt.** (Vasilev and Evtimov 1973); **Krupnik-Sandanski-Petrich Valley:** around Mitino vill. (Atanassov 1964).

Lasius brunneus (Latreille, 1798)

Records (Map 51): **Bulgaria** (Emery 1914, Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992, Seifert 1992); **Central Predbalkan:** Dermantsi vill. (Lukovit) (Atanassov 1934); **Eastern Stara Planina Mts:** Sliven (Forel 1892); **Zemen Gorge** (Lapeva-Gjonova 2004b); **Sofia Basin:** Sofia (Lapeva-Gjonova and Atanasova 2004, Antonova 2005, Antonova and Penev 2006, 2008), the surroundings of Sofia near Vladaya vill. (Antonova and Penev 2006, 2008); **Vitosha Mt.** (Atanassov 1952); **Plana Mt.:** Kokalyane monastery (Kokalyane vill.), Richov well loc. (Dolni Okol vill.), Turmachka neighbourhood (Plana vill.), Bukov dol loc. (Pasarel vill.) (Vagalinski and Lapeva- Gjonova in press); **Lozenska Planina Mt.** (Vasilev and Evtimov 1973): near German monastery (Antonova and Penev 2008); **Bakadzhik-Burgas district:** Aytos

(Forel 1892); **Strandzha Mt.** (Antonova et al. in press); **Krupnik-Sandanski-Petrich Valley:** west of Petrich, along Strumeshnitsa river (Atanassov 1964); **Dupnitsa Basin:** Dupnitsa (Forel 1892); **Western Rhodopi Mts:** Peshtera (Lapeva-Gjonova in press(a)); **Eastern Rhodopi Mts:** Malko Popovo vill. (Madzharovo) (Lapeva-Gjonova 2004a); **Southern Black Sea coast:** Veselie vill. (Forel 1892).

Lasius carniolicus Mayr, 1861

Records (Map 52): **Thracian Lowland:** Svilengrad (Atanassov and Dlusskij 1992); **Krupnik-Sandanski-Petrich Valley:** Petrich (Atanassov and Dlusskij 1992); **Southern Black Sea coast:** Tsarevo (Atanassov and Dlusskij 1992).

Lasius citrinus Emery, 1922

= *Lasius affinis* (Schenck, 1852)

Records (Map 52): **Eastern Danubian Plain:** Tutrakan [Atanassov and Dlusskij 1992 (as *Lasius affinis*)]; **Central Predbalkan:** Elena [Atanassov and Dlusskij 1992 (as *Lasius affinis*)]; **Eastern Stara Planina Mts:** Prilep [Seifert 1988b (as *Lasius affinis*)], 30 km north of Karnobat (Seifert 1990), Karandila loc. [Atanassov and Dlusskij 1992 (as *Lasius affinis*)]; **Sofia Basin:** Sofia [Antonova 2004, 2005, Lapeva-Gjonova and Atanasova 2004 (as *Lasius affinis*), Antonova and Penev 2006, 2008], the surroundings of Sofia near Vladaya vill. (Antonova and Penev 2006); **Lozenska Planina Mt.:** near German monastery (Antonova and Penev 2008); **Western Rhodopi Mts:** Asenovgrad, Belovo [Atanassov and Dlusskij 1992 (as *Lasius affinis*)]; **Northern Black Sea coast:** Balchik [Atanassov and Dlusskij 1992 (as *Lasius affinis*)].

Lasius distinguendus (Emery, 1916)

= *Lasius hybridus* (Bondroit, 1918)

Records (Map 52): **Bulgaria** (Agosti and Collingwood 1987a, Seifert 1988b, Schlick-Steiner et al. 2002); **Western Predbalkan:** Rachene river valley [Vasilev 1984 (as *Lasius hybridus*)].

Notes: This species was omitted by Atanassov and Dlusskij (1992).

Lasius emarginatus (Olivier, 1792)

Records (Map 53): **Bulgaria** (Agosti and Collingwood 1987a, Seifert 1992); **Eastern Danubian Plain:** Tutrakan (Atanassov and Dlusskij 1992); **Western Predbalkan:** along Rachene

river (Vasilev 1984), Belogradchik (Atanassov and Dlusskij 1992); **Central Predbalkan:** Elena (Atanassov and Dlusskij 1992); **Eastern Stara Planina Mts:** Karandila loc. (Atanassov and Dlusskij 1992); **Lozenska Planina Mt.** (Vasilev and Evtimov 1973); **Strandzha Mt.** (Antonova et al. in press); **Krupnik-Sandanski-Petrich Valley:** west of Petrich, along Strumeshnitsa river (Atanassov 1964); **Belasitsa Mt.** (Atanassov and Dlusskij 1992); **Western Rhodopi Mts:** Peshtera, Batak (Lapeva-Gjonova in press(a)), Asenovgrad (Atanassov and Dlusskij 1992); **Eastern Rhodopi Mts:** Madzharovo, Padalo vill. (Krumovgrad) (Lapeva-Gjonova 2004a); **Northern Black Sea coast:** Balchik (Atanassov and Dlusskij 1992).

Lasius flavus (Fabricius, 1782)

Records (Map 53): **Bulgaria** (Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992); **Western Stara Planina Mts:** Milanovo vill. (Vratsa) (Atanassov 1934); **Central Stara Planina Mts:** Botev peak (Ray hut), Vezhen hut, under Bratanitsa peak (Atanassov 1936); **Sofia Basin:** Sofia (Atanassov 1934, Lapeva-Gjonova 2004b, Lapeva-Gjonova and Atanasova 2004, Antonova 2005, Antonova and Penev 2006, 2008), the surroundings of Sofia (Antonova and Penev 2006); **Lyulin Mt.** (Atanassov 1934); **Vitosha Mt.** (Atanassov 1936, 1952); **Podbalkan Basin:** Rose valley (Atanassov et al. 1955); **Lozenska Planina Mt.** (Vasilev and Evtimov 1973); **Strandzha Mt.:** Balgari vill. (Atanassov 1934); **Belasitsa Mt.** (Atanassov 1964); **Krupnik-Sandanski-Petrich Valley:** along Strumeshnitsa river (Atanassov 1964); **Rila Mt.:** Borovets (Atanassov 1934); **Western Rhodopi Mts:** Dobrostan vill. (Seifert 1983), Smolyan, Rakitovo (Lapeva-Gjonova in press (a)).

Lasius fuliginosus (Latreille, 1798)

Records (Map 54): **Bulgaria** (Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992); **Western Danubian Plain:** Sadovets vill. (Lukovit) (Atanassov 1934); **Central Predbalkan:** Dermantsi vill. (Lukovit) (Atanassov 1934); **Western Stara Planina Mts:** Chepan (Dragoman) (Borisova et al. 2005); **Eastern Stara Planina Mts:** Byala vill. (Sliven) (Atanassov 1936); **Sofia Basin:** Sofia (Forel 1892, Antonova 2004, 2005, Lapeva-Gjonova and Atanasova 2004, Antonova and Penev 2006, 2008), the surroundings of Sofia near Vladaya vill. (Antonova and Penev 2006, 2008); **Lyulin Mt.** (Atanassov 1936); **Vitosha Mt.** (Atanassov 1952); **Plana Mt.:** Plana vill., Peyova buka hut (Pasarel vill.), Tsiganka peak (Pasarel vill.), Astronomical observatory (between Plana vill. and Dolni Okol vill.) (Vagalinski and Lapeva-Gjonova in press); **Podbalkan Basins:** Rose valley (Atanassov et al. 1955); **Lozenska Planina Mt.** (Vasilev and Evtimov 1973); **Thracian Lowland:** Krichim (Atanassov 1936); **Bakadzhik-Burgas district:** Aytos (Forel 1892); **Osogovska Planina Mt.:** Hisarlaka (Atanassov 1936); **Krupnik-Sandanski-Petrich Valley:** west of Petrich (Atanassov 1964); **Western Rhodopi Mts:** Peshtera (Forel 1892, Atanassov 1934), Dospat, Smolyan, Batak, Velingrad (Lapeva-Gjonova in press(a)); **Eastern Rhodopi Mts:** Zhelezino vill. (Ivaylovgrad) (Lapeva-Gjonova 2004a); **Northern Black Sea coast:** Evksinograd palace (Atanassov 1936).

***Lasius jensi* Seifert, 1982**

Records (Map 54): **Western Rhodopi Mts:** Dobrostan (Seifert 1988b).
Notes: This species was omitted by Atanassov and Dlusskij (1992).

***Lasius meridionalis* (Bondroit, 1920)**

Records: Bulgaria (Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992).

***Lasius mixtus* (Nylander, 1846)**

Records (Map 54): **Bulgaria** (Emery 1914, Seifert 1988b); **Central Predbalkan:** Dermantsi vill. (Lukovit) (Atanassov 1936), Lovech (Atanassov and Dlusskij 1992); **Western Stara Planina Mts:** Chepan Mt. (Dragoman) (Borisova et al. 2005); **Central Stara Planina Mts:** Teteven (Atanassov and Dlusskij 1992); **Eastern Stara Planina Mts:** Kotel (Atanassov and Dlusskij 1992); **Zemen Gorge:** Zemen station (Atanassov 1936); **Osogovska Planina Mt.:** Kyustendil (Atanassov and Dlusskij 1992); **Boboshevo-Simitli Valley:** Kocherinovo (Atanassov and Dlusskij 1992); **Mesta Valley:** Gotse Delchev district (Atanassov and Dlusskij 1992).

***Lasius myops* Forel, 1894**

Records (Map 55): **Bulgaria** (Agosti and Collingwood 1987a); **Central Predbalkan:** Veliko Tarnovo (Seifert 1983); **Vitosha Mt.** (Atanassov 1952); **Northern Black Sea coast:** Obzor vill. (Seifert 1983).

Notes: Atanassov and Dlusskij (1992) considered this species as a junior synonym of *L. flavus*.

***Lasius neglectus* Van Loon, Boomsma and Andrasfalvy, 1990**

Records (Map 55): **Eastern Danubian Plain:** Senokos vill., Dobrich (Espadaler et al. 2007); **Northern Black Sea coast:** Albena [Seifert 1992 (as *L. turcicus*), 2000a], Kranevo, Balchik, Kavarna, Varna municipality (Espadaler et al. 2007).

***Lasius niger* (Linnaeus, 1758)**

Lasius niger var. *alienoniger* Forel, 1874: Forel 1892, Atanassov 1936, 1952 (see Notes below)

Records (Map 55): **Bulgaria** (Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992, Seifert 1992); **Western Predbalkan:** Krapets vill. [Atanassov 1936 (as *Lasius alieno niger*)]; **Central Predbalkan:** Dermantsi vill. (Lukovit) [Atanassov 1934, 1936 (as *Lasius alieno niger*)]; **Western Stara Planina Mts:** Chepan (Dragoman) (Borisova et al. 2005); **Eastern Stara Planina Mts:** Sliven (Forel 1892); **Zemen Gorge:** Skakavitsa waterfall (Atanassov 1936); **Vitosha Mt.** [Atanassov 1952 (as *Lasius niger* L. var. *alieno-niger* Forel), Hlaváč et al. 2007]; **Sofia Basin:** Sofia [Atanassov 1936 (as *Lasius alieno niger*), Antonova 2004, 2005, Lapeva-Gjonova 2004b, Lapeva-Gjonova and Atanasova 2004, Antonova and Penev 2006, 2008, Hlaváč et al. 2007], the surroundings of Sofia near Vladaya vill. (Antonova and Penev 2006, 2008); **Plana Mt.:** Pasarel vill. (Vagalinski and Lapeva-Gjonova in press); **Podbalkan Basins:** Rose valley (Atanassov et al. 1955); **Lozenska Planina Mt.** (Vasilev and Evtimov 1973): near German monastery (Antonova and Penev 2008); **Belasitsa Mt.** (Atanassov 1964); **Krupnik-Sandanski-Petrich Valley:** around Mitino vill., Petrich plain (Atanassov 1964); **Rila Mt.:** the valley of Rilska river [Forel 1892 (as *Lasius niger* Rasse *alienus* var. *alieno-niger*)]; **Western Rhodopi Mts:** Asenovgrad [Forel 1892 (as *Lasius niger* Rasse *alienus* var. *alieno-niger*)], Devin, Peshtera, Batak (Lapeva-Gjonova in press(a)); **Southern Black Sea coast:** Burgas, Sozopol [Forel 1892 (as *Lasius niger* Rasse *alienus* var. *alieno-niger*)], Veselie vill. (Forel 1892).

Notes: Some of the above mentioned records most probably include also closely related *L. platythorax*. *L. niger alienoniger* Forel, 1874 has been considered by different authors to be a separate species or a junior synonym of *L. niger*, but Seifert (1992) proposed it should be considered as *incertae sedis* in *Lasius* (for details see Bolton 1995, Bolton et al. 2006).

Lasius nitidigaster Seifert, 1996

Lasius rabaudi: Agosti and Collingwood 1987a, Seifert 1988b, *nec* Bondroit, 1917

Records (Map 56): **Bulgaria** (Agosti and Collingwood 1987a, Seifert 1988b); **Central Stara Planina Mts:** Tryavna (Seifert 1988b); **Plana Mt.:** Plana vill. (Vagalinski and Lapeva-Gjonova in press); **Krupnik-Sandanski-Petrich Valley:** Melnik (Seifert 1988b, 1997a); **Northern Black Sea coast:** Obzor (Seifert 1988b, 1997a); **Southern Black Sea coast:** Nesebar (Seifert 1988b).

Lasius paralienus Seifert, 1992

Records (Map 56): **Bulgaria** (Seifert 1992); **Sofia Basin:** Sofia and the surroundings of Sofia (Antonova and Penev 2006); **Plana Mt.:** Plana vill., Astronomical observatory (between Plana vill. and Dolni Okol vill.), Turmachka neighbourhood (Plana vill.), Kiselichki kamak peak (Alino vill.) (Vagalinski and Lapeva-Gjonova in press); **Lozens-**

ka Planina Mt.: north of Pasarel vill. (Antonova and Penev 2008); **Strandzha Mt.** (Antonova et al. in press); **Northern Black Sea coast:** Kavarna (Csősz and Markó 2005).

See also **Notes** to *L. alienus*, above.

Lasius platythorax Seifert, 1991

Records (Map 56): **Sofia Basin:** Sofia, the surroundings of Sofia near Vladaya vill. (Antonova and Penev 2006, 2008); **Plana Mt.:** Pasarel vill., Bukov dol loc. (Pasarel vill.) (Vagalinski and Lapeva-Gjonova in press); **Lozenska Planina Mt.:** near German monastery (Antonova and Penev 2008); **Western Rhodopi Mts:** Peshtera, Batak (Lapeva-Gjonova in press(a)).

See also **Notes** to *L. niger*, above.

Lasius psammophilus Seifert, 1992

Records (Map 57): **Sofia Basin:** Sofia (Antonova and Penev 2006, 2008); **Plana Mt.:** Plana vill., Pasarel vill. (Vagalinski and Lapeva-Gjonova in press).

See also **Notes** to *L. alienus*, above.

Lasius umbratus (Nylander, 1846)

Records (Map 57): **Bulgaria** (Atanassov and Dlusskij 1992); **Sofia Basin:** Sofia (Forel 1892, Lapeva-Gjonova and Atanasova 2004); **Ograzhden Mt.** (Atanassov 1964); **Western Rhodopi Mts:** Dospat (Lapeva-Gjonova in press(a)); **Eastern Rhodopi Mts:** Dedets vill. (Zlatograd) (Lapeva-Gjonova 2004a).

Genus *Camponotus* Mayr, 1861

Camponotus aegaeus Emery, 1915

Records (Map 58): **Krupnik-Sandanski-Petrich Valley:** Kamenitsa vill., Mikrevo vill.; **Pirin Mt.:** Kalimantsi vill. (Lapeva-Gjonova in press (a)).

Camponotus aethiops (Latreille, 1798)

= *Camponotus marginatus* Latreille, 1798 (Forel 1892)
= *Camponotus aethiops concavus* Dalla Torre, 1893
= *Camponotus aethiops sylvaticoides* Dalla Torre, 1893

Records (Map 58): **Bulgaria** (Emery 1914, Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992); **Western Predbalkan:** Rachene river valley (Vasilev 1984); **Western Stara Planina Mts:** Ledenika cave (Vratsa) [Atanassov 1934 (as *C. maculatus aethiops* var. *concava*)], Chepan (Dragoman) (Borisova et al. 2005); **Eastern Stara Planina Mts:** Sliven [Forel 1892 (as *Camponotus maculatus* Rasse *aethiops* Latr.)]; **Sofia Basin:** Sofia [Forel 1892 (as *Camponotus marginatus*), Antonova and Penev 2006], the surroundings of Sofia (Antonova and Penev 2006); **Vitosha Mt.** (Atanassov 1936, 1952); **Plana Mt.:** Alino vill., Turmachka neighbourhood, Peyova buka hut (Pasarel vill.) (Vagalinski and Lapeva-Gjonova in press); **Podbalkan Basin:** Rose valley (Atanassov et al. 1955); **Ihtimanska Sredna Gora:** Benkovski peak [Atanassov 1934 (as *C. maculatus aethiops*)]; **Lozenska Planina Mt.** (Vasilev and Evtimov 1973): German monastery [Atanassov 1934 (as *C. maculatus aethiops* var. *concava*)], north of Pasarel vill. (Antonova and Penev 2008); **Thracian Lowland:** Pazardzhik [Forel 1892 (as *Camponotus marginatus*)]; **Bakadzhik-Burgas district:** Aytos [Forel 1892 (as *Camponotus marginatus, Camponotus maculatus* Rasse *aethiops* Latr. var. *concavus* Forel and *Camponotus maculatus* Rasse *aethiops* Latr.)]; **Strandzha Mt.** (Antonova et al. in press); **Dupnitsa Basin:** Dupnitsa [Forel 1892 (as *Camponotus maculatus* Rasse *aethiops* Latr.)]; **Krupnik-Sandanski-Petrich Valley:** along Strumeshnitsa river, around Marino pole vill. (Atanassov 1964); **Ograzhden Mt.** (Atanassov 1964); **Belasitsa Mt.** (Atanassov 1964); **Slavianka Mt.** (Atanassov 1936); **Western Rhodopi Mts** [Atanassov 1934 (as *C. maculatus aethiops*)]; **Western Rhodopi Mts:** Asenovgrad [Forel 1892 (as *Camponotus maculatus* Rasse *aethiops* Latr. var. *sylvaticoides*)], Dospat (Lapeva-Gjonova in press(a)); **Eastern Rhodopi Mts:** Kokiche vill. (Kardzhali), Byal Izvor vill. (Ardino), Momchilgrad, Madzharovo, Malko Popovo vill. (Madzharovo), Senoklas vill. (Madzharovo), Zhelezino vill. (Ivaylovgrad), Malki Voden vill. (Madzharovo), between Dabovets vill. and Kamilski dol vill. (Ivaylovgrad), between Odrintsi vill. and Svirachi vill. (Ivaylovgrad) (Lapeva-Gjonova 2004a); **Southern Black Sea coast:** Veselie vill. [Forel 1892 (as *Camponotus marginatus* and *Camponotus maculatus Rasse aethiops* Latr.)], Sozopol [Forel 1892 (as *Camponotus maculatus* Rasse *aethiops* Latr.)].

Camponotus dalmaticus (Nylander, 1849)

Camponotus lateralis var. *dalmaticus* Nyl.: Forel 1892

Records (Map 58): **Bulgaria** (Agosti and Collingwood 1987a); **Eastern Stara Planina Mts:** Karandila loc. (Atanassov and Dlusskij 1992); **Ihtimanska Sredna Gora Mts:** Benkovski peak (Atanassov 1934, Atanassov and Dlusskij 1992); **Thracian Lowland:** Pazardzhik (Forel 1892, Atanassov and Dlusskij 1992), Svilengrad (Atanassov and Dlusskij 1992); **Belasitsa Mt.** (Atanassov 1964, Atanassov and Dlusskij 1992); **Krupnik-Sandanski-Petrich Valley:** Petrich plain (Atanassov 1964), Kresna gorge, Petrich (Atanassov and Dlusskij 1992); **Rila Mt.** (Forel 1892); **Slavianka Mt.:** Petrovo

vill. (Atanassov and Dlusskij 1992); **Western Rhodopi Mts:** Podkova vill., Asenovgrad (Atanassov and Dlusskij 1992); **Eastern Rhodopi Mts:** Momchilgrad (Atanassov and Dlusskij 1992); Madzharovo (Lapeva-Gjonova 2004a); **Southern Black Sea coast:** Tsarevo (Atanassov and Dlusskij 1992).

Camponotus fallax (Nylander, 1856)

Camponotus caryae: Vasilev and Evtimov 1973, *nec* Fitch, 1855

Records (Map 59): **Bulgaria** (Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992); **Sofia Basin:** Sofia (Atanassov 1934, Lapeva-Gjonova and Atanasova 2004, Antonova 2005, Antonova and Penev 2006, 2008), the surroundings of Sofia near Vladaya vill. (Antonova and Penev 2006, 2008); **Plana Mt.:** Bukov dol loc. (Pasarel vill.) (Vagalinski and Lapeva-Gjonova in press); **Lozenska Planina Mt.** [Vasilev and Evtimov 1973 (as *C. caryae*)]: German monastery (Atanassov 1934); **Krupnik-Sandanski-Petrich Valley:** Parvomay vill. (Atanassov 1964).

Camponotus gestroi Emery, 1878

Records (Map 59): **Krupnik-Sandanski-Petrich Valley:** Kamenitsa vill. (Lapeva-Gjonova, in press(a)).

Camponotus herculeanus (Linnaeus, 1758)

Records (Map 59): **Bulgaria** (Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992); **Stara Planina Mts** (Seifert 1989); **Western Stara Planina Mts:** Vilya-glava mine (Atanassov 1934); **Sofia Basin:** Sofia (Atanasov 1934); **Vitosha Mt.** (Atanassov 1936, 1952); **Plana Mt.:** above Dyavolski most bridge (Kokalyane vill.), Bukov dol loc. (Pasarel vill.), Peyova buka hut (Pasarel vill.) (Vagalinski and Lapeva-Gjonova in press); **Ihtimanska Sredna Gora Mts:** Benkovski peak (Atanassov 1934); **Strandzha Mt.:** Papia peak (Atanassov 1934); **Belasitsa Mt.** (Atanassov 1964); **Krupnik-Sandanski-Petrich Valley:** along Luda Mara river (Atanassov 1964); **Rila Mt.** (Seifert 1989): Elenin peak, Rilska river valley (Forel 1892), Borovets (Atanassov 1934, 1936), Kostenets (Atanassov 1934); **Pirin Mt.** (Seifert 1989): Bansko-Banderitsa (Atanassov 1934); **Rhodopi Mts** (Seifert 1989); **Western Rhodopi Mts:** Karlak peak (Atanasov 1934), Perelik peak (Atanassov 1936), Rakitovo, Batak (Lapeva-Gjonova in press(a)); **Southern Black Sea coast:** Maslen nos (Atanassov 1934).

Notes: *C. herculeanus* is a boreo-montane species and its record from "Maslen nos" seems doubtful.

Camponotus ionius Emery, 1920

Records (Map 60): **Bulgaria** (Agosti and Collingwood 1987a); **Krupnik-Sandanski-Petrich Valley:** Kozhuh Mt. (Atanassov 1964).

Notes: This species was omitted by Atanassov and Dlusskij (1992).

Camponotus lateralis (Olivier, 1792)

Records (Map 60): **Bulgaria** (Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992); **Central Predbalkan:** Dermantsi vill. (Lukovit) (Atanassov 1936); **Eastern Stara Planina Mts:** Sliven (Forel 1892); **Sofia Basin:** Sofia (Atanassov 1934); **Vitosha Mt.:** Boyana waterfall (Atanassov 1934); **Lozenska Planina Mt.** (Vasilev and Evtimov 1973); **Strandzha Mt.** (Atanassov 1934, Antonova et al. in press); **Belasitsa Mt.** (Atanassov 1964, Hubenov et al. 1998); **Slavianka Mt.** (Atanassov 1936); **Western Rhodopi Mts:** Asenovgrad (Forel 1892); **Eastern Rhodopi Mts:** Kokiche vill. (Kardzhali), Zvezdel vill. (Momchilgrad), between Odrintsi vill. and Svirachi vill. (Ivaylovgrad), between Dabovets vill. and Kamilski dol vill. (Ivaylovgrad) (Lapeva-Gjonova 2004a); **Southern Black Sea coast:** Sozopol (Forel 1892).

Camponotus ligniperdus (Latreille, 1802)

= *Camponotus herculeanus herculeanoligniperda* Forel, 1874

Records (Map 60): **Bulgaria** (Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992, Seifert 2008); **Central Predbalkan:** Dermantsi vill. (Lukovit) [Atanassov 1934 (as *C. herculeanus* var. *herculeano-ligniperda*)]; **Stara Planina Mts** (Seifert 1989); **Western Stara Planina Mts:** Iskrets vill. (Atanassov 1934); **Zemen Gorge:** Zemen (Atanassov 1934); **Sofia Basin:** Sofia, Eleshnitsa vill. (Atanassov 1934), surroundings of Sofia near Vladaya vill. (Antonova and Penev 2006, 2008); **Vitosha Mt.** (Atanassov 1934, 1952): Dragalevtsi (Atanassov 1934), Vladaya vill. (Atanasov 1936); **Plana Mt.:** Astronomical observatory (between Plana vill. and Dolni Okol vill.), Tsiganka peak (Pasarel vill.), Pasarel vill., Bukov dol loc. (Pasarel vill.), Peyova buka hut (Pasarel vill.) (Vagalinski and Lapeva-Gjonova in press); **Podbalkan Basins:** Karlovo gorge (Atanassov 1934); **Ihtimanska Sredna Gora Mts:** Benkovski peak (Atanassov 1934); **Lozenska Planina Mt.** (Vasilev and Evtimov 1973): German monastery [Atanassov 1934 (as *C. herculeanus* var. *herculeano-ligniperda*), Antonova and Penev 2008]; **Belasitsa Mt.** (Atanassov 1964); **Rila Mt.** (Seifert 1989): Rila monastery (Forel 1892), Borovets [Atanassov 1934 (as *C. herculeanus* var. *herculeanoligniperda*)], Kostenets (Atanassov 1936); **Pirin Mt.** (Seifert 1989): Bansko-Banderitsa, Damyanitsa vill. (Atanassov 1934); **Rhodopi Mts** (Seifert 1989); **Western Rhodopi Mts:** Batak

(Atanassov 1934), Dospat, Smolyan (Lapeva-Gjonova in press(a)); **Eastern Rhodopi Mt.:** Dyadovtsi vill. (Ardino) (Lapeva-Gjonova 2004a); **Northern Black Sea coast:** Evksinograd (Atanassov 1934).

Camponotus piceus (Leach, 1825)

= *Camponotus atricolor* (Nylander, 1849)
= *Camponotus merula* (Losana, 1834)
= *Camponotus foveolatus* (Mayr, 1853)
= *Camponotus lateralis* var. *rectus* Forel, 1892

Records (Map 61): **Bulgaria** [Emery 1914 (as *C. lateralis* var. *atricolor*), Agosti and Collingwood 1987a (as *Camponotus atricolor*)]; **Western Predbalkan:** Rachene river valley [Vasilev 1984 (as *C. merula*)], Belogradchik (Atanassov and Dlusskij 1992); **Eastern Stara Planina Mts:** Sliven [Forel 1892 (as *Camponotus lateralis* var. *atricolor*)]; **Sofia Basin:** Sofia [Forel 1892, Atanassov 1934 (as *C. lateralis* var. *atricolor*), Antonova 2005, Antonova and Penev 2006, 2008]; surroundings of Sofia near Vladaya vill. (Antonova and Penev 2006, 2008); **Vitosha Mt.** [Atanassov 1952 (as *C. lateralis* var. *atricolor*)]: Knyazhevo [Forel 1892 (as *Camponotus lateralis var. foveolatus*)]; **Plana Mt.:** Alino vill., Bukov dol loc. (Pasarel vill.) (Vagalinski and Lapeva-Gjonova in press); **Lozenska Planina Mt.:** north of Pasarel vill. (Antonova and Penev 2008); **Thracian Lowland:** Pazardzhik [Forel 1892 (as *Camponotus lateralis* var. *foveolatus* and *Camponotus lateralis* var. *dalmaticus*)]; **Bakadzhik-Burgas district:** Aytos [Forel 1892 (as *Camponotus lateralis* var. *foveolatus*)]; **Strandzha Mt.** (Antonova et al. in press): Malko Tarnovo (Atanassov and Vasileva 1976, Hubenov et al. 1998); **Dupnitsa Basin:** Dupnitsa [Forel 1892 (as *Camponotus lateralis* var. *atricolor*)]; **Belasitsa Mt.** (Atanassov 1964, Hubenov et al. 1998); **Rila Mt.:** Rilska river valley [Forel 1892 (as *Camponotus lateralis* var. *atricolor*, *Camponotus lateralis* var. *foveolatus* and *Camponotus lateralis* var. *dalmaticus*)]; **Krupnik-Sandanski-Petrich Valley:** Petrich plain (Atanassov 1964); **Eastern Rhodopi Mts:** Zvezdel vill. (Momchilgrad), Malki Voden vill. (Madzharovo), Padalo vill. (Krumovgrad) (Lapeva-Gjonova 2004a); **Southern Black Sea coast:** Pomorie [Forel 1892 (as *Camponotus lateralis* var. *foveolatus* and *Camponotus lateralis* var. *rectus*)], Sozopol [Forel 1892 (as *Camponotus lateralis* var. *atricolor*, *Camponotus lateralis* var. *foveolatus* and *Camponotus lateralis* var. *rectus*)].

Notes: For most of the last two decades *C. atricolor* has been considered as a junior synonym of *C. piceus*. Seifert (1996) noted *C. atricolor* as separate species, while Radchenko (1997b) considerd it as junior synonym of *C. piceus*. Markó et al. (2006) revived this name from synonymy, but stressed that confirmation of the status of this species needs further investigation.

Camponotus samius Forel, 1889

= *Camponotus spagnolinii* Emery, 1920

Records (Map 61): **Bulgaria** (Agosti and Collingwood 1987a); **Podbalkan Basins:** Sotirya vill. (Sliven) [Atanassov and Vasileva 1976 (as *C. spagnolinii*)]; **Strandzha Mt.** (Antonova et al. in press); **Krupnik-Sandanski-Petrich Valley:** Kozhuh Mt. (Atanassov 1964); **Western Rhodopi Mts:** Vishteritsa [Atanassov and Vasileva 1976 (as *C. spagnolinii*)], Asenovgrad [Atanassov and Vasileva 1976 (as *C. spagnolinii*), Hubenov et al. 1998); **Eastern Rhodopi Mts:** Madzharovo, Malko Popovo vill. (Madzharovo), Zhelezino vill. (Ivaylovgrad), between Odrintsi vill. and Svirachi vill. (Ivaylovgrad), between Dabovets vill. and Kamilski dol vill. (Ivaylovgrad), Meden buk vill. (Ivaylovgrad) (Lapeva-Gjonova 2004a); **Northern Black Sea coast:** Obzor vill. [Atanassov and Vasileva 1976 (as *C. spagnolinii*)]; **Southern Bulgaria** (Atanassov and Dlusskij 1992).

Camponotus sylvaticus (Olivier, 1792)

Records (Map 61): **Lozenska Planina Mt.** (Vasilev and Evtimov 1973).

Notes: This species has not been recorded from Bulgaria since 1973 and its presence in this territory needs confirmation.

Camponotus truncatus (Spinola, 1808)

Records (Map 62): **Bulgaria** (Agosti and Collingwood 1987a, Borowiec 2007); **Stara Planina Mts** (Atanassov and Dlusskij 1992); **Sofia Basin:** Sofia (Lapeva-Gjonova and Atanasova 2004, Antonova 2005, Antonova and Penev 2006, 2008); **Krupnik-Sandanski-Petrich Valley:** west of Petrich, around Parvomay vill. (Atanassov 1964); **Western Rhodopi Mts:** Asenovgrad [Forel 1892 (as *Colobopsis truncata*)]; **Eastern Rhodopi Mts:** Madzharovo (Lapeva-Gjonova 2004a); **Southwestern Bulgaria** (Atanassov and Dlusskij 1992).

Camponotus vagus (Scopoli, 1763)

Records (Map 62): **Bulgaria** (Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992); **Central Predbalkan:** Dermantsi vill. (Lukovit) (Atanassov 1934); **Western Stara Planina Mts:** Ogoya vill. (Atanassov 1934), Ledenika cave (Vratsa Balkan) (Atanassov 1936); **Central Stara Planina Mts:** Kostinya river valley (Teteven) (Atanassov 1936); **Zemen Gorge:** Zemen (Atanassov 1934); **Sofia Basin:** Sofia (Atanassov 1936, Lapeva-Gjonova and Atanasova 2004, Antonova 2005, Antonova and Penev 2006, 2008), the surroundings of Sofia (Antonova and Penev 2006); **Lyulin Mt.** (Atanassov 1934); **Vitosha Mt.** (Atanassov 1936, 1952); **Plana Mt.:** Bukov dol loc. (Pasarel vill.), Pasarel vill.

(Vagalinski and Lapeva-Gjonova in press); **Podbalkan Basins:** Rose valley (Atanassov et al. 1955); **Ihtimanska Sredna Gora Mts:** Benkovski peak (Atanassov 1934); **Lozenska Planina Mt.** (Vasilev and Evtimov 1973); **Thracian Lowland:** Krichim (Atanassov 1936); **Strandzha Mt.:** Papia peak (Atanassov 1934), Malko Tarnovo (Atanassov 1936); **Osogovska Planina Mt.:** Hisarlaka (Kyustendil) (Atanassov 1936); **Belasitsa Mt.** (Atanassov 1964); **Krupnik-Sandanski-Petrich Valley:** along Strumeshnitsa river, around Parvomay vill. (Atanassov 1964); **Slavianka Mt.** (Atanassov 1936); **Western Rhodopi Mts:** Dospat, Batak (Lapeva-Gjonova in press(a)); **Eastern Rhodopi Mts:** Madzharovo (Lapeva-Gjonova 2004a); **Northern Black Sea coast:** Evksinograd palace (Atanassov 1936); **Southern Black Sea coast:** Veselie vill. (Forel 1892).

Genus *Formica* Linnaeus, 1758

Formica aquilonia Yarrow, 1955

Records (Map 63): **Western Predbalkan:** Belogradchik (Atanassov and Dlusskij 1992); **Rila Mt.:** Zavrachitsa hut (Wesselinoff 1973).

Conservation Status: Lower Risk/near threatened (IUCN).

Formica cinerea Mayr, 1853

= *Formica balcanina* Petrov and Collingwood, 1993
Formica fuscocinerea: Atanassov 1936, 1952, 1964, Atanassov et al. 1955, *nec* Forel, 1874

Records (Map 63): **Bulgaria** (Emery 1914, Atanassov and Dlusskij 1992, Petrov and Collingwood 1993); **Western Predbalkan:** Rachene river valley (Vasilev 1984); **Western Stara planina Mts:** Chepan Mt. (Dragoman) (Borisova et al. 2005); **Sofia Basin:** Sofia [Atanassov 1936 (as *F. cinerea* var. *fusco-cinerea*), Antonova 2004 (as *F. balcanina*), 2005, Lapeva-Gjonova and Atanasova 2004 (as *F. balcanina*), Antonova and Penev 2006, 2008], surroundings of Sofia near Vladaya vill. (Antonova and Penev 2006, 2008); **Vitosha Mt.** [Atanassov 1936 (as *F. cinerea* var. *fusco-cinerea*), 1952]; **Plana Mt.:** Plana vill., Pasarel vill., Turmachka neighbourhood (Plana vill.), Dolni Okol vill., Astronomical observatory (between Plana vill. and Dolni Okol vill.), Rechyov kamak peak (Plana vill.) (Vagalinski and Lapeva-Gjonova in press); **Podbalkan Basins:** Rose valley (Atanassov et al. 1955); **Lozenska Planina Mt.** (Vasilev and Evtimov 1973), north of Passarel vill. (Antonova and Penev 2008); **Thracian Lowland:** Pazardzhik (Forel 1892); **Krupnik-Sandanski-Petrich Valley:** Petrich, Mitino vill., Parvomay, along Strumeshnitsa river [Atanassov 1964 (as *F. cinerea* var. *fusco-cinerea*)]; **Rila Mt.:** Rila monastery (Forel 1892); **Pirin Mt.:** Melnik, Rozhen, Karlanovo vill. (Seifert 2002b); **Western Rhodopi Mts:** Sveta Petka vill., Velingrad, Bachkovo vill. (Seifert 2002b), Chervenata stena reserve (Hlaváč et al. 2007), Dospat, Devin, Velingrad, Laki,

Chepintsi vill., Batak (Lapeva-Gjonova in press(a)); **Eastern Rhodopi Mts:** Byal Izvor vill. (Ardino), Senoklas vill. (Madzharovo), Dyadovtsi vill. (Ardino) [Lapeva-Gjonova 2004a (as *F. balcanina*)]; **Northern Black Sea coast:** Zlatni pyasatsi (Seifert 2002b).

Formica clara Forel, 1886

= *Formica lusatica* Seifert, 1997

Records (Map 63): **Bulgaria** [Seifert 1997b, 2008 (as *Formica lusatica*)]; **Plana Mt.:** Plana vill., near Peyova buka hut (Pasarel vill.) (Vagalinski and Lapeva-Gjonova in press); **Northern Black Sea coast:** Obzor vill. (Seifert and Schultz 2009); **Southern Black Sea coast:** Nesebar (Barrett 1970).

Notes: This species was not recorded for Bulgaria by Atanassov and Dlusskij (1992), but very recently its occurrence in this country was confirmed by Seifert and Schultz (2009).

Formica cunicularia Latreille, 1798

= *Formica fusca* var. *fuscorufibarbis* Forel, 1874

Records (Map 64): **Bulgaria** (Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992); **Western Predbalkan:** Rachene river valley (Vasilev 1984); **Western Stara Planina Mts:** Chepan Mt. (Dragoman) (Borisova et al. 2005); **Sofia Basin:** Sofia (Lapeva-Gjonova and Atanasova 2004, Antonova 2005, Antonova and Penev 2006, 2008), surroundings of Sofia (Barrett 1970, Antonova and Penev 2006), near Vladaya vill. (Antonova and Penev 2008); **Plana Mt.:** Plana vill., Peyova buka hut (Pasarel vill.), Astronomical observatory (between Plana vill. and Dolni Okol vill.), Alino vill. (Vagalinski and Lapeva-Gjonova in press); **Lozenska Planina Mt.:** north of Pasarel vill. (Antonova and Penev 2008); **Bakadzhik-Burgas district:** Aytos [Forel 1892 (as *F. fusca gagates* var. *fusco-rufibarbis*)]; **Strandzha Mt.** (Antonova et al. in press); **Eastern Rhodopi Mts:** Dedets vill. (Zlatograd), Madzharovo, Zhelezino vill. (Ivaylovgrad), Meden buk vill. (Ivaylovgrad) (Lapeva-Gjonova 2004a); **Southern Black Sea coast:** Burgas [Forel 1892 (as *F. fusca gagates* var. *fusco-rufibarbis*)].

Formica exsecta Nylander, 1846

Records (Map 64): **Bulgaria** (Emery 1914, Agosti and Collingwood 1987a, Seifert 2000c); **Predbalkan** [Wesselinoff 1973 (as *Coptoformica exsecta*)]; **Central Predbalkan:** Dermantsi vill. (Lukovit) (Atanassov 1934); **Stara Planina Mts** [Bobev 1972, Wesselinoff 1973 (as *Coptoformica exsecta*), Vatov and Bobev 1976, Atanassov and Dlusskij 1992]; **Western**

Stara Planina Mts: Gerana mine (Vratsa district), Petrohan-Kom (Atanassov 1936); **Central Stara Planina Mts:** Vezhen hut, Zhaltets peak, Bratanitsa peak (Atanassov 1936), Dobrila peak [Wesselinoff 1973 (as *Coptoformica exsecta*)], Tsarichina reserve (under Vezhen peak), Dermenka hut (Atanassov and Dlusskij 1992); **Viskyar Mt.**, **Lyulin Mt.**, **Verila Mt.** [Wesselinoff 1973 (as *Coptoformica exsecta*)]; **Vitosha Mt.** [Atanassov 1934, 1936, 1952, Wesselinoff 1967, 1973 (as *Coptoformica exsecta*), Atanassov and Dlusskij 1992]: Momina skala loc. (Atanassov 1934); **Plana Mt.** [Wesselinoff 1967, 1973 (as *Coptoformica exsecta*)]; **Sredna Gora Mts** (Bobev 1972, Vatov and Bobev 1976); **Osogovo-Belasitsa group** (Vatov and Bobev 1976); **Osogovska Planina Mt.**, **Slavianka Mt.**, **Belasitsa Mt.** (Atanassov and Dlusskij 1992); **Rila-Pirin group** (Bobev 1972, Vatov and Bobev 1976); **Rila Mt.** [Wesselinoff 1973 (as *Coptoformica exsecta*), 1979, Vesselinov 1981, Atanassov and Dlusskij 1992]: Elenin peak (Forel 1892), Parangalitsa reserve [Wesselinoff 1968 and 1973 (as *Coptoformica exsecta*)], Ibar reserve (Atanassov 1983); **Pirin Mt.** [Wesselinoff 1973 (as *Coptoformica exsecta*), 1979, Vesselinov 1981, Atanassov and Dlusskij 1992]; **Rhodopi Mts** [Wesselinoff 1973 (as *Coptoformica exsecta*), 1979, Vesselinov 1981, Atanassov 1983, Atanassov and Dlusskij 1992]; **Western Rhodopi Mts:** Devin (Lapeva-Gjonova in press(a)); **Eastern Rhodopi Mts** (Bobev 1972, Vatov and Bobev 1976).

Formica fusca Linnaeus, 1758

Records (Map 65): **Bulgaria** (Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992); **Western Danubian Plain:** Vidin (Gateva 1975); **Central Predbalkan:** Dermantsi vill. (Lukovit) (Atanassov 1934); **Sofia Basin:** Sofia, Vrania palace (Atanassov 1934), the surroundings of Sofia (Atanassov 1934, Antonova 2005, Antonova and Penev 2006); **Vitosha Mt.** (Atanassov 1952); **Plana Mt.:** Plana vill., Kokalyane monastery (Kokalyane vill.), Bukov dol loc. (Pasarel vill.) (Vagalinski and Lapeva-Gjonova in press); **Lozenska Planina Mt.** (Vasilev and Evtimov 1973): German monastery (Atanassov 1934); **Thracian Lowland:** Krichim (Atanassov 1934); **Rila Mt.:** Elenin peak (Forel 1892); **Slavianka Mt.:** Alibotush reserve (Antonova 2009); **Western Rhodopi Mts:** Smolyan (Gateva 1975, Lapeva-Gjonova in press(a)), Peshtera (Lapeva-Gjonova in press(a)).

Formica gagates Latreille, 1798

Formica fusca r. *gagates* var. *cinereofuscoides* Forel, 1892 (unavailable name)
Formica fusca var. *fuscorufibarbis* Forel, 1874: Forel 1892 (as *Formica fusca* r. *gagates* var. *fuscorufibarbis*, unavailable name).
Formica fusca var. *cinereorufibarbis* Forel, 1874: Forel 1892 (as *Formica fusca* r. *gagates* var. *cinereorufibarbis*, unavailable name).

Records (Map 65): **Bulgaria** (Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992); **Central Predbalkan:** Dermantsi vill. (Lukovit) (Atanassov 1934); **Western Stara**

Planina Mts: Chepan (Dragoman) (Borisova et al. 2005); **Zemen Gorge:** Krastata ornitsa loc. above Skakavitsa station (Atanassov 1934); **Sofia Basin:** Sofia, Knyazhevo [Forel 1892 (as *Formica fusca* Rasse *gagates* Latr. var. *cinereorufibarbis*)], Sofia and surroundings (Antonova and Penev 2006); **Plana Mt.:** Pasarel vill., Peyova buka hut (Pasarel vill.) (Vagalinski and Lapeva-Gjonova in press); **Lozenska Planina Mt.** (Vasilev and Evtimov 1973): German monastery (Atanassov 1936, Antonova and Penev 2008)]; **Belasitsa Mt.** (Atanassov 1964); **Rila Mt.** (Forel 1892); **Western Rhodopi Mts:** Asenovgrad (Forel 1892), Syutka peak (Atanassov 1936); **Eastern Rhodopi Mts:** Malko Popovo vill. (Madzharovo), Madzharovo, Kokiche vill. (Kardzhali), Meden buk vill. (Ivaylovgrad) (Lapeva-Gjonova 2004a); **Southern Black Sea coast:** Pomorie (Forel 1892).

Formica glauca Ruzsky, 1895

Records (Map 65): **Bulgaria** (Agosti and Collingwood 1987a); **Central Predbalkan:** along Lukovitsko dere river (Atanassov and Vasileva 1976, Hubenov et al. 1998); **Central Stara Planina Mts:** Teteven, along Ribaritsa river (Atanassov and Vasileva 1976, Hubenov et al. 1998); **Thracian Lowland:** Chirpan (Atanassov and Vasileva 1976 and Hubenov et al. 1998 (as *F. cunicularia glauca*)]; **Western Rhodopi Mts:** Asenovgrad (Atanassov and Vasileva 1976).

Formica lemani Bondroit, 1917

Records (Map 66): **Bulgaria** (Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992); **Vitosha Mt.** (Atanassov 1936, 1952, Gateva 1975); **Belasitsa Mt.** (Atanassov 1964); **Western Rhodopi Mts:** Smolyan, Rakitovo, Dospat (Lapeva-Gjonova in press(a)).

Formica lugubris Zetterstedt, 1838

Records (Map 66): **Bulgaria** (Agosti and Collingwood 1987a); **Eastern Danubian Plain:** Stozher vill. (Otto et al. 1962), Razgrad, Ruse, Dobrich (Ronketi and Penev 1966), Suvorovo (Keremidchiev et al. 1972); **Predbalkan** (Wesselinoff 1973); **Eastern Predbalkan:** Targovishte (Ronketi and Penev 1966); **Stara Planina Mts:** (Bobev 1972, Wesselinoff 1973, Atanassov 1974, Vatov and Bobev 1976); **Western Stara Planina Mts:** under Kom peak, Todorini kukli peaks (Atanassov and Dlusskij 1992); **Central Stara Planina Mts:** Boatin reserve (under Tetevenska baba peak), Tsarichina reserve (under Vezhen peak), Dermenka hut (Troyan Balkan) (Atanassov 1983), Vezhen peak (Atanassov and Dlusskij 1992); **Eastern Stara Planina Mts:** Tvarditsa pass, Karandila loc., under Chumerna peak, Razboyna vill. (Atanassov and Dlusskij 1992); **Viskyar Mt.**, **Lyulin Mt.**, **Verila Mt.** (Wesselinoff 1973); **Vitosha Mt.** (Otto et al. 1962, Wes-

selinoff 1967, 1973, Keremidchiev et al. 1972, Atanassov 1974): Cherni vrach (Atanassov 1974), Marchevski ostrets peak, Selimitsa peak, Kupena peak, Samara (Sedloto) peak (Wesselinoff 1967, Atanassov and Dlusskij 1992); **Plana Mt.** (Wesselinoff 1973): Astronomical observatory (between Plana vill. and Dolni Okol vill.) (Vagalinski and Lapeva-Gjonova in press); **Sredna Gora Mts** (Bobev 1972, Vatov and Bobev 1976): Koprivshtitsa (Vesselinov 1981); **Sakar Mt.** (Atanassov and Dlusskij 1992); **Osogovo-Belasitsa group** (Vatov and Bobev 1976); **Belasitsa Mt.**, **Slavianka Mt.** (Atanassov 1974, Atanassov and Dlusskij 1992): Alibotush reserve (Atanassov 1974); **Krupnik-Sandanski-Petrich Valley:** Sandanski (Gateva 1975); **Rila Mt.** (Bobev 1972, Wesselinoff 1973, 1979, Atanassov 1974, Vatov and Bobev 1976, Vesselinov 1981): under Ibar peak, Borovets (Otto et al. 1962, Atanassov and Dlusskij 1992), Parangalitsa reserve (Wesselinoff 1968, 1973), Semkovo (Wesselinoff 1973), Rila monastery (Gateva 1975), Ibar reserve (Atanassov 1983); **Pirin Mt.** (Bobev 1972, Wesselinoff 1973, 1979, Atanassov 1974, Vatov and Bobev 1976, Vesselinov 1981, Atanassov and Dlusskij 1992, Seifert 1996): Bansko (Otto et al. 1962), Kremenski lakes (Wesselinoff 1973), Bayuvi dupki reserve (Atanassov 1983); **Rhodopi Mts** (Bobev 1972, 1973, Wesselinoff 1973, 1979, Atanassov 1974, Gateva 1974, 1975, 1978, Vatov and Bobev 1976, Vesselinov 1981, Seifert 1996); **Western Rhodopi Mts:** Chehlyovo forestry (near Velingrad) (Otto et al. 1962, Keremidchiev et al. 1972, Wesselinoff 1973, 1974, Atanassov and Dlusskij 1992), Hvoyna vill. (Otto et al. 1962, Atanassov and Dlusskij 1992), Yundola, Vishteritsa, Shiroka Laka (Otto et al. 1962), Mantaritsa-Petlite-Kaynatsite reserve (under Syutka peak) (Atanassov 1983), Snezhanka peak (Gateva 1974, Atanassov and Dlusskij 1992), loc. Terekliytsa, above Smolyan lakes (Gateva 1974), Eshekulak, Syutka peak, under Karatepe peak, Perelik peak (Atanassov and Dlusskij 1992); **Eastern Rhodopi Mts:** (Vatov and Bobev 1976); **Northern Black Sea coast:** Varna, Balchik (Ronketi and Penev 1966).

Conservation Status: Lower Risk/near threatened (IUCN).

Formica picea Nylander, 1846

Records (Map 67): **Central Stara Planina Mts:** along Kostinya river; **Eastern Stara Planina Mts:** above Obzor vill.; **Rila Mt.:** above Dolna Bania vill., along Bistritsa river; **Western Rhodopi Mts:** Hvoyna vill. [Atanassov and Dlusskij 1992 (as *F.* (*Raptiformica*) *transcaucasica*)].

Notes: A discussion of the quite complicate taxonomic history of the name *F. picea* Nylander lies outside of the remit of the current work; for details see Dlussky (1967), Atanassov and Dlusskij (1992), Bolton (1995), Bolton et al. (2006) and Seifert (2004).

Formica polyctena Förster, 1850

Records (Map 67): **Bulgaria** (Seifert 2008); **Danubian Plain:** *Dachi usoi* loc., *Dalga polyana* loc. (Wesselinoff 1973); **Eastern Stara Planina Mts:** Balgarka peak, Vetrila

peak, Zheravna (Wesselinoff 1973); **Golo bardo Mt.:** around Radomir (Atanassov and Dlusskij 1992); **Rila Mt.:** Malyovitsa peak, southwest of Govedartsi vill. (Atanassov and Dlusskij 1992); **Pirin Mt.:** Mocharata loc. (Wesselinoff 1973).

Conservation Status: Lower Risk/near threatened (IUCN).

Formica pratensis Retzius, 1783

= *Formica nigricans* Bondroit, 1912
= *Formica cordieri* Bondroit, 1917

Records (Map 68): **Bulgaria** [Emery 1914, Agosti and Collingwood 1987a (as *F. pratensis* and *F. nigricans*), Atanassov and Dlusskij 1992, Csősz and Markó 2005]; **Danubian Plain** [Bobev 1972 (as *F. nigricans*), Wesselinoff 1973 (as *F. nigricans*), 1979, Vatov and Bobev 1976, Vesselinov 1981]; **Eastern Danubian Plain:** between Balchik and Dobrich [Otto et al. 1962 (as *F. nigricans*)], Shumen (Gateva 1975); **Predbalkan** [Wesselinoff 1973 (as *F. nigricans*)]; **Central Predbalkan:** Lovech (Gateva 1975); **Stara Planina Mts** [Bobev 1972 (as *F. nigricans*), Wesselinoff 1973 (as *F. nigricans*), 1979, Vatov and Bobev 1976, Vesselinov 1981]; **Western Stara Planina Mts:** Zgorigrad vill. (Vratsa), Batulia vill. (Atanassov 1936), Murgash peak [Wesselinoff 1973 (as *F. nigricans*)]; **Central Stara Planina Mts:** Boatin reserve (under Tetevenska baba peak) (Atanassov 1983); **Eastern Stara Planina Mts** [Bobev 1972 (as *F. nigricans*), Vatov and Bobev 1976, Vesselinov 1981, Wesselinoff 1979]; **Verila Mt.** [Wesselinoff 1967, 1973 (as *F. nigricans*)]; **Viskyar Mt.** [Wesselinoff 1973 (as *F. nigricans*)]; **Zemen Gorge:** Zemen marsh (Atanassov 1936); **Sofia Basin:** Sofia (Forel 1892, Gateva 1975, Antonova 2005, Antonova and Penev 2006, 2008), the surroundings of Sofia (Antonova and Penev 2006); **Lyulin Mt.** (Atanassov 1936, Wesselinoff 1967, 1973 (as *F. nigricans*)]; **Vitosha Mt.** [(Atanassov 1936, 1952, Wesselinoff 1967, 1973 (as *F. nigricans*)]: Bistritsa vill. (Lapeva-Gjonova 2004b); **Plana Mt.** [Wesselinoff 1967, 1973 (as *F. nigricans*)], Tsiganka peak (Pasarel vill.), Bukov dol loc. (Pasarel vill.), Plana vill., Pasarel vill., Manastirishte peak (Plana vill.), Astronomical observatory (between Plana vill. and Dolni Okol vill.), Mechitski kamak peak (Plana vill.) (Vagalinski and Lapeva-Gjonova in press); **Podbalkan Basins:** Rose valley (Atanassov et al. 1955); **Sredna Gora Mts** [Bobev 1972 (as *F. nigricans*), 1973, 1979, Vatov and Bobev 1976, Vesselinov 1981, Wesselinoff 1979]; **Surnena Sredna Gora Mts:** Stara Zagora (Gateva 1975); **Lozenska Planina Mt.** [Wesselinoff 1967 (as *F. nigricans*), Vasilev and Evtimov 1973): north of Pasarel vill. (Antonova and Penev 2008); **Sakar-Tundzha district:** along Tundzha river [Wesselinoff 1973 (as *F. nigricans*)]; **Strandzha Mt.** [Bobev 1972 (as *F. nigricans*), Vatov and Bobev 1976, Wesselinoff 1979, Vesselinov 1981]; **Osogovo-Belasitsa group** [Wesselinoff 1973 (as *F. nigricans*), Vatov and Bobev 1976]; **Osogovska Planina Mt.:** Hisarlaka (Atanassov 1936); **Belasitsa Mt.** (Atanassov 1964); **Krupnik-Sandanski-Petrich Valley:** Petrich (Atanassov 1964),

Sandanski (Gateva 1975); **Rila Mt.** [Forel 1892, Otto et al. 1962 (as *F. nigricans*), Bobev 1972, Wesselinoff 1973 (as *F. nigricans*)]: Ibar reserve (Atanassov 1983); **Pirin Mt.** [Otto et al. 1962 (as *F. nigricans*), Bobev 1972 (as *F. nigricans*), Wesselinoff 1973 (as *F. nigricans*), Gateva 1975]; **Mesta Valley:** Yakoruda (Gateva 1975); **Rhodopi Mts** [Otto et al. 1962 (as *F. nigricans*), Wesselinoff 1973 (as *F. nigricans*), Gateva 1978, Atanassov 1983]; **Western Rhodopi Mts** [Bobev 1972 (as *F. nigricans*)]: Batak, Peshtera, Shiroka laka vill. [Bobev 1973 (as *F. nigricans*)], Chepelare, Golyam Beglik dam (Gateva 1975), Dospat (Lapeva-Gjonova in press(a)); **Eastern Rhodopi Mts** [Bobev 1972 (as *F. nigricans*), Vatov and Bobev 1976]: Senoklas vill. (Madzharovo) (Lapeva-Gjonova 2004a); **Northern Black Sea coast:** Varna [Otto et al. 1962 (as *F. nigricans*), Ronketi and Penev 1966 (as *Formica cordieri* and *F. nigricans*), Gateva 1975], Balchik (Ronketi and Penev 1966); **Southern Black Sea coast:** Burgas (Forel 1892).

Conservation Status: Lower Risk/near threatened (IUCN).

Formica pressilabris Nylander, 1846

Records (Map 68): **Bulgaria** (Atanassov and Dlusskij 1992); **Western Stara Planina Mts:** Petrohan-Kom (Atanassov 1936); **Vitosha Mt.** (Atanassov 1952); **Rila Mt.:** Kostenets (Atanassov 1936); **Rhodopi Mts** (Gateva 1975).

Formica rufa Linnaeus, 1761

Records (Map 69): **Bulgaria** (Agosti and Collingwood 1987a); **Danubian Plain** (Bobev 1972, Wesselinoff 1973, 1979, Vatov and Bobev 1976, Vesselinov 1981); **Eastern Danubian Plain:** Razgrad, Ruse, Dobrich (Ronketi and Penev 1966); **Predbalkan** (Wesselinoff 1973); **Central Predbalkan:** Dermantsi vill. (Lukovit) (Atanassov 1934, 1936), Aglen vill. (Lukovit) (Atanassov 1934); **Eastern Predbalkan:** Targovishte (Ronketi and Penev 1966); **Stara Planina Mts** (Bobev 1972, Wesselinoff 1973, 1979, Atanassov 1974, Vatov and Bobev 1976, Vesselinov 1981, Atanassov and Dlusskij 1992); **Western Stara Planina Mt.:** Sokolets peak, Milanovo vill., Zgorigrad vill. (Atanassov 1934); **Central Stara Planina Mts:** Kostinya river valley, Botev peak (Ray hut) (Atanassov 1936), Boatin reserve (under Tetevenska baba peak), Tsarichina reserve (under Vezhen peak), Dermenka hut (Troyan Balkan) (Atanassov 1983); **Eastern Stara Planina Mts** (Bobev 1972, Vatov and Bobev 1976, Vesselinov 1981, Wesselinoff 1979): Byala vill. (Sliven) (Atanassov 1936); **Viskyar Mt.** (Wesselinoff 1973); **Verila Mt.** (Wesselinoff 1973); **Zemen Gorge:** Zemen marsh (Atanassov 1936); **Sofia Basin:** Sofia (Lapeva-Gjonova and Atanasova 2004, Antonova and Penev 2006), near Vladaya village (Antonova and Penev 2008); **Lyulin Mt.** (Atanassov 1934, Wesselinoff 1973); **Vitosha Mt.** (Atanassov 1934, 1936, 1952, 1974, 1979, Wesselinoff 1967, 1973): Knyazhevo (Atanassov

1934), Dragalevtsi (Atanassov 1936); **Plana Mt.:** Plana vill., Tsiganka peak (Pasarel vill.), Alino vill. (Wesselinoff 1967, 1973, Vagalinski and Lapeva-Gjonova in press); **Sredna Gora Mts** (Bobev 1972, Wesselinoff 1973, 1979, Vatov and Bobev 1976, Vesselinov 1981); **Ihtimanska Sredna Gora Mt.:** Benkovski peak (Atanassov 1934); **Lozenska Planina Mt.** (Wesselinoff 1967, Vasilev and Evtimov 1973, Lapeva-Gjonova 2004b); **Sakar-Tundzha district:** along Tundzha river (Wesselinoff 1973); **Strandzha Mt.** (Bobev 1972, Vatov and Bobev 1976, Wesselinoff 1979, Vesselinov 1981); **Osogovo-Belasitsa group** (Wesselinoff 1973, Vatov and Bobev 1976); **Belasitsa Mt.** (Atanassov 1964, 1974, Wesselinoff 1974, Lapeva-Gjonova 2004b); **Krupnik-Sandanski-Petrich Valley:** Luda Mara river valley (Atanassov 1964), Sandanski (Gateva 1975); **Rila-Pirin group** (Bobev 1972, Vatov and Bobev 1976); **Rila Mt.** (Wesselinoff 1973, 1979, Atanassov 1974, Vesselinov 1981, Atanassov and Dlusskij 1992): Rilska river valley (Forel 1892), Borovets (Atanassov 1934), Parangalitsa reserve (Wesselinoff 1968), Govedartsi vill., Borovets, Raduil, Kostenets (Otto et al. 1962), Ibar reserve (Atanassov 1983), Panichishte (Lapeva-Gjonova 2004b); **Pirin Mt.** (Vesselinov 1981, Wesselinoff 1973, 1979): Razlog, Bansko, Dobrinishte, Gotse Delchev (Otto et al. 1962); **Slavianka Mt.** (Atanassov 1974); **Rhodopi Mts** (Wesselinoff 1973, Gateva 1978, Atanassov 1983, Atanassov and Dlusskij 1992); **Western Rhodopi Mts** (Bobev 1972, 1973, Atanassov 1974): Selishte, Vishteritsa, Eleshnitsa (Otto et al. 1962), Yundola (Otto et al. 1962, Bechev and Stoyanova 2004), Chepelare, Golyam Beglik dam, Smolyan (Gateva 1975), Zdravets hut, Byala cherkva resort, Ravnishta hut, Skalni mostove, Varhovrah hut (Bechev and Stoyanova 2004), Rakitovo, Batak, Peshtera (Lapeva-Gjonova in press(a)); **Eastern Rhodopi Mts** (Bobev 1972, Vatov and Bobev 1976); **Northern Black Sea coast:** Varna, Balchik (Ronketi and Penev 1966).

Conservation Status: Lower Risk/near threatened (IUCN); Protected (Bulgarian Biodiversity Act (2002), Annex 2 and 3).

Formica rufibarbis Fabricius, 1793

Records (Map 70): **Bulgaria** (Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992, Seifert 2008); **Eastern Stara Planina Mts:** Sliven [Forel 1892 (as *Formica fusca* Rasse *rufibarbis*)]; **Sofia Basin:** Sofia (Lapeva-Gjonova and Atanasova 2004, Antonova 2005, Antonova and Penev 2006, 2008); surroundings of Sofia near Vladaya vill. (Antonova and Penev 2006, 2008); **Vitosha Mt.** [Atanassov 1952, Wesselinoff 1967 (as *Serviformica rufibarbis*)]; **Plana Mt.** (Vagalinski and Lapeva-Gjonova in press); **Lozenska Planina Mt.** [Wesselinoff 1967 (as *Serviformica rufibarbis*), Vasilev and Evtimov 1973], north of Pasarel vill. (Antonova and Penev 2008); **Bakadzhik-Burgas district:** Aytos [Forel 1892 (as *Formica fusca* Rasse *rufibarbis*)]; **Strandzha Mt.:** Balgari vill. (Atanassov 1936); **Krupnik-Sandanski-Petrich Valley:** Petrich, along Strumeshnitsa river (Atanassov 1964); **Rila Mt.:** Rila monastery (Forel 1892); **Western Rhodopi Mts:** Asenovgrad [Forel 1892

(as *Formica fusca* Rasse *rufibarbis*)], Dobrostan (Seifert and Schultz 2009), Dospat, Velingrad, Batak (Lapeva-Gjonova in press(a)); **Southern Black Sea coast:** Sozopol, Pomorie [Forel 1892 (as *Formica fusca* Rasse *rufibarbis*)], Burgas (Forel 1895).

Formica sanguinea Latreille, 1798

Records (Map 70): **Bulgaria** (Agosti and Collingwood 1987a); **Danubian Plain** [Wesselinoff 1973 (as *Raptiformica sanguinea*), Vatov and Bobev 1976]; **Western Danubian Plain:** Vidin (Gateva 1975); **Predbalkan** (Wesselinoff 1973); **Central Predbalkan:** Lukovit, Dermantsi vill. (Atanassov 1934); **Stara Planina Mts** [Wesselinoff 1973 (as *Raptiformica sanguinea*)]; **Western Stara Planina Mts** (Vatov and Bobev 1976): Gerana mine (Vratsa) (Atanassov 1934); **Eastern Stara Planina Mts** (Vatov and Bobev 1976): Sliven (Forel 1892); **Verila Mt.** [Wesselinoff 1967and 1973 (as *Raptiformica sanguinea*)]; **Viskyar Mt.**, **Lyulin Mt.** [Wesselinoff 1973 (as *Raptiformica sanguinea*)]; **Sofia Basin:** Sofia and surroundings of Sofia, near Vladaya village (Antonova and Penev 2006, 2008); **Vitosha Mt.** [Atanassov 1936, 1952, Wesselinoff 1973 (as *Raptiformica sanguinea*), Gateva 1975]: Knyazhevo (Forel 1892), Zlatnite mostove loc. (Atanassov 1934); **Plana Mt.** [Wesselinoff 1973 (as *Raptiformica sanguinea*)]: Plana vill., Bukov dol loc. (Pasarel vill.), Tsiganka peak (Pasarel vill.), Astronomical observatory (between Plana vill. and Dolni Okol vill.), Pasarel vill. (Vagalinski and Lapeva-Gjonova in press); **Strandzha Mt.** (Vatov and Bobev 1976); **Osogovska Planina Mt.:** Hisarlaka (Kyustendil) (Atanassov 1936); **Rila-Pirin group** (Vatov and Bobev 1976); **Rila Mt.** [Wesselinoff 1973 (as *Raptiformica sanguinea*)]: Elenin peak (Forel 1892, Atanassov and Dlusskij 1992), Rila monastery (Forel 1892, Gateva 1975), Parangalitsa reserve (Wesselinoff 1968); **Rhodopi Mts** [Wesselinoff 1973 (as *Raptiformica sanguinea*)]; **Western Rhodopi Mts:** Buynovo vill. (Hlaváč et al. 2007), Smolyan (Gateva 1975, Lapeva-Gjonova in press(a)), Dospat, Rakitovo (Lapeva-Gjonova in press(a)); **Eastern Rhodopi Mts:** Malki Voden vill. (Madzharovo) (Lapeva-Gjonova 2004a).

Formica truncorum Fabricius, 1804

Records (Map 70): **Bulgaria** (Atanassov and Dlusskij 1992); **Danubian Plain** (Wesselinoff 1973); **Western Predbalkan:** Belogradchik (Atanassov and Vasileva 1976, Hubenov et al. 1998), *Bleshnitsa* (Hubenov et al. 1998); **Western Stara Planina Mts:** Berkovitsa (Atanassov and Vasileva 1976); **Eastern Stara Planina Mts:** under Razboyna peak (Atanassov and Vasileva 1976); **Osogovska Planina Mt.:** Hisarlaka (Kyustendil) (Atanassov and Vasileva 1976); **Krupnik-Sandanski-Petrich Valley:** Sandanski (Atanassov and Vasileva 1976, Hubenov et al. 1998); **Sturgach Mt.** (Atanassov and Vasileva 1976); **Western Rhodopi Mts:** Eleshnitsa (Atanassov and Vasileva 1976); **Northern Black Sea coast:** Kranevo (Atanassov and Vasileva 1976).

Genus *Proformica* Ruzsky, 1902

Proformica kobachidzei K. Arnoldi, 1968

Records (Map 71): **Boboshevo-Simitli Valley:** Bistritsa vill. (Blagoevgrad) (Atanassov and Dlusskij 1992).

Proformica korbi Emery, 1909

Records (Map 71): **Boboshevo-Simitli Valley:** Kocherinovo (Dlussky 1969).

Notes: This species was omitted by Atanassov and Dlusskij (1992).

Proformica nasuta (Nylander, 1856)

Records (Map 71): **Eastern Stara Planina Mts:** Sliven [Atanassov 1934 (as *Formica nasuta*)]; **Thracian Lowland:** Krichim [Atanassov 1934 (as *Formica nasuta*)]; **Western Rhodopi Mts:** Radilovo vill. (Peshtera) [Atanassov 1936 (as *Formica nasuta*)].

Notes: Atanassov and Dlusskij (1992) noted that specimens determined by Forel (1892) and Atanassov (1964) as *P. nasuta* in fact are *P. striaticeps* (see below). At the same time, they stressed that material, based on which Atanassov (1934, 1936) recorded *P. nasuta* for Bulgaria, has been lost, and it is impossible to make definitive conclusion on the taxonomic status of those ants. *P. nasuta* is definitely distributed in the Iberian Peninsula and France, but it is also recorded from Romania and Greece (see Markó et al. 2006, Radchenko 2007). As we cannot exclude its occurrence in Bulgaria, we include this species in the current list; on the other hand, this data needs confirmation.

Proformica pilosiscapus Dlussky, 1969

Records (Map 72): **Krupnik-Sandanski-Petrich Valley:** Sandanski district (Atanassov and Dlusskij 1992); **Mesta Valley:** Dolno Dryanovo vill. (Atanassov and Dlusskij 1992, Hubenov et al. 1998).

Proformica striaticeps (Forel, 1911)

Records (Map 72): **Western Stara Planina Mts:** Chepan (Dragoman) (Borisova et al. 2005); **Eastern Stara Planina Mts:** Sliven [Forel 1892 (as *Formica* (*Proformica*) *nasuta*)]; **Thracian Lowland:** Pazardzhik [Forel 1892 (as *Formica* (*Proformica*) *nasuta*)];

Bakadzhik-Burgas district: Aytos [Forel 1892 (as *Formica* (*Proformica*) *nasuta*)]; **Belasitsa Mt.** [Atanassov 1964 (as *Formica* (*Proformica*) *nasuta*)]; **Krupnik-Sandanski-Petrich Valley:** Kresna gorge, Kozhuh Mt. (Atanassov and Dlusskij 1992); **Dupnitsa Basin:** Dupnitsa [Forel 1892 (as *Formica* (*Proformica*) *nasuta*)]; **Rila Mt.** [Forel 1892 (as *Formica* (*Proformica*) *nasuta*), Atanassov and Dlusskij 1992]; **Pirin Mt.** (Atanassov and Dlusskij 1992); **Eastern Rhodopi Mts:** Momchilgrad, Senoklas vill. (Madzharovo) (Lapeva-Gjonova 2004a).

Genus *Cataglyphis* Förster, 1850

Cataglyphis aenescens (Nylander, 1849)

Myrmecocystus cursor Fonsc. var. *aenescens* Nyl.: Atanassov 1936, 1964

Records (Map 73): **Bulgaria** [Atanassov 1936 (as *Myrmecocystus cursor* var. *aenescens*)]; **Eastern Danubian Plain:** Dunav river valley (lower reaches) (Atanassov and Dlusskij 1992); **Central Predbalkan:** Vit river valley (middle reaches) (Atanassov and Dlusskij 1992); **Eastern Stara Planina Mts:** Sliven [Forel 1892 (as *Myrmecocystus cursor*)]; **Ihtimanska Sredna Gora Mts:** Benkovski peak [Atanassov 1934 (as *Myrmecocystus cursor*)]; **Bakadzhik-Burgas district:** Aytos [Forel 1892 (as *Myrmecocystus cursor*)]; **Strandzha Mt.:** [Atanassov 1934 (as *Myrmecocystus cursor*)]; **Krupnik-Sandanski-Petrich Valley:** west of Petrich, along Strumeshnitsa river, Kozhuh Mt. [Atanassov 1964 (as *Myrmecocystus cursor* var. *aenescens*)]; **Western Rhodopi Mts:** Peshtera [Atanassov 1934 (as *Myrmecocystus cursor*)]; **Black Sea coast** (Atanassov and Dlusskij 1992); **Southern Black Sea coast:** Pomorie, Burgas, Sozopol, Veselie vill. [Forel 1892 (as *Myrmecocystus cursor*)].

Notes: Forel (1892) and Atanassov (1934) recorded *C. cursor* (as *Myrmecocystus cursor*) from Bulgaria; the species distribution in Mediterranean region runs from Iberian peninsula to Greece (Agosti 1990, Radchenko 2007). We suggest that the occurence of *C. cursor* (which can hardly be distinguished from *C. aenescens*) is rather improbable, and old records of this species should be considered as belonging to *C. aenescens*.

Cataglyphis bicolor rufiventris Emery, 1925

Records (Map 73): **Thracian Lowland:** Pazardzhik (Agosti 1990); **Western Rhodopi Mts:** Asenovgrad (Agosti 1990).

Notes: This taxon was omitted by Atanassov and Dlusskij (1992). Taxonomic status of this subspecies is not properly resolved and we cannot exclude the possibility that this name is junior synonym of *C. nodus*.

Cataglyphis lividus (André, 1881)

= *Cataglyphis livida bulgarica* Atanassov, 1982 (recorded by all authors, below).

Records (Map 74): **Eastern Rhodopi Mts:** Odrintsi vill. (Ivaylovgrad) (Atanassov 1982, Agosti 1990, Atanassov and Dlusskij 1992), Mandritsa vill., Gugutka vill., Svirachi vill. (Atanassov and Dlusskij 1992).

Cataglyphis nodus (Brullé, 1833)

Myrmecocystus viaticus Fab. var. *megalocola* Foerst.: Forel 1892

Records (Map 74): **Bulgaria** (Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992); **Central Predbalkan:** Dermantsi vill. (Lukovit), Balgarski izvor vill. (Teteven), Lukovit [Atanassov 1936 (as *Myrmecocystus viaticus*)]; **Central Stara Planina Mts:** Shipka pass (Csősz and Markó 2005); **Eastern Stara Planina Mts:** Sliven [Forel 1892 (as *Myrmecocystus viaticus* Fab. var. *megalocola*)], along Belenska river [Atanasov 1936 (as *Myrmecocystus viaticus*)]; **Zemen Gorge:** Skakavitsa station (Kyustendil) [Atanassov 1936 (as *Myrmecocystus viaticus*)]; **Sofia Basin:** surroundings of Sofia (Antonova and Penev 2006); **Podbalkan Basins:** Rose valley (Atanassov et al. 1955); **Ihtimanska Sredna Gora Mts:** Benkovski peak (Atanassov 1934); **Lozenska Planina Mts** (Vasilev and Evtimov 1973): north of Pasarel vill. (Antonova and Penev 2008); **Thracian Lowland:** Pazardzhik [Forel 1892 (as *Myrmecocystus viaticus* Fab. var. *megalocola*)], Svilengrad, Ognyanovo (Atanassov and Vasileva 1976, Hubenov et al. 1998), Plovdiv [Atanassov 1936 (as *Myrmecocystus viaticus*)]; **Bakadzhik-Burgas district:** Aytos [Forel 1892 (as *Myrmecocystus viaticus* Fab. var. *megalocola*)]; **Strandzha Mt.** (Antonova et al. in press): Papia peak [Atanassov 1936 (as *Myrmecocystus viaticus*)]; **Osogovska Planina Mt.:** Osogovo hut (Kyustendil) [Atanassov 1936 (as *Myrmecocystus viaticus*)]; **Ograzhden Mt.** [Atanassov 1964 (as *Myrmecocystus viaticus*)]; **Boboshevo-Simitli Valley:** Kocherinovo [Forel 1892 (as *Myrmecocystus viaticus* Fab. var. *megalocola*)]; **Krupnik-Sandanski-Petrich Valley:** west of Petrich, along Strumeshnitsa river, around Marikostino vill., Marino pole vill. [Atanassov 1964 (as *Myrmecocystus viaticus*)]; **Pirin Mt.:** Vihren (Csősz and Markó 2005); **Slavianka Mt.** [Atanassov 1934 (as *Myrmecocystus viaticus*)]; **Western Rhodopi Mts:** Asenovgrad [Forel 1892 (as *Myrmecocystus viaticus* Fab. var. *megalocola*)], Peshtera [Atanassov 1934 (as *Myrmecocystus viaticus* Fab. and *Myrmecocystus viaticus* Fab. var. *megalocola*)]; **Eastern Rhodopi Mts:** Momchilgrad, Madzharovo, between Dabovets vill. and Kamilski dol vill. (Ivaylovgrad) (Lapeva-Gjonova 2004a); **Northern Black Sea coast:** Evksinograd palace (Atanassov 1936); **Southern Black Sea coast:** Veselie vill., Sozopol [Forel 1892 (as *Myrmecocystus viaticus* Fab. var. *megalocola*)].

Notes: Atanassov and Dlusskij (1992) without any comments referred to records of *Myrmecocystus viaticus* var. *megalocola* (Forel 1892, Atanassov 1934), and *C. viaticus*

(Atanassov 1934, 1936, 1964, Atanassov et al. 1955, Vasilev and Evtimov 1973) to *C. nodus*. The first name is now considered as a junior synonym of *C. bicolor* (Förster) – the species is distributed mostly in North Africa and probably in the Middle East. *C. viaticus* is definitely known from Iberian Peninsula and North Africa. At the same time, in Balkans, lives single species from the *bicolor* species-group: *C. nodus*. As the taxonomy of this genus was studied insufficiently previously to the last two decades, all old records of *C. bicolor* and *C. viaticus* for Bulgaria most probably belong to *C. nodus*.

Genus *Polyergus* Latreille, 1804

Polyergus rufescens (Latreille, 1798)

Records (Map 75): **Bulgaria** (Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992); **Central Stara Planina Mts:** Brestnitsa vill. (Teteven) (Atanassov 1936); **Sofia Basin:** Sofia (Atanassov 1934, Antonova 2005, Antonova and Penev 2006), the surroundings of Sofia (Antonova and Penev 2006); **Podbalkan Basins:** Rose valley (Atanassov et al. 1955); **Ihtimanska Sredna Gora Mts:** Momin prohod, Benkovski peak (Atanassov 1934); **Strandzha Mt.:** Valchanov most loc. (Malko Tarnovo) (Atanassov 1936); **Ograzhden Mt.** (Atanassov 1964); **Krupnik-Sandanski-Petrich Valley:** Kozhuh Mt., Marino pole vill. (Atanassov 1964); **Rila Mt.:** Rila monastery (Forel 1892).

Discussion

Analysis of the faunistic data

The current Catalogue was compiled based on the investigation of the available material, including that collected by the authors personally, and on the critical reconsideration of the existing publications concerning Bulgarian ants (more than 100 sources). As a result, we include here 163 ant species, belonging to 40 genera of 6 subfamilies:

Subfamily Amblyoponinae – 1 genus, 2 species
Subfamily Ponerinae – 3 genera, 5 species
Subfamily Proceratiinae – 1 genus, 2 species
Subfamily Myrmicinae – 21 genera, 77 species
Subfamily Dolichoderinae – 5 genera, 9 species
Subfamily Formicinae – 9 genera, 68 species

Nevertheless, several records seem doubtful and need confirmation. On the other hand, we assume that after revision of a couple of genera (e.g. *Messor*, *Tetramorium*, *Temnothorax*, *Camponotus*, etc.) the number of species might increase.

The number of species of the respective genera is as follows:

Genera: *Cryptopone*, *Pyramica*, *Manica*, *Stenamma*, *Pheidole*, *Myrmecina*, *Monomorium*, *Solenopsis*, *Formicoxenus*, *Harpagoxenus*, *Chalepoxenus*, *Anergates*, *Dolichoderus*, *Liometopum*, *Linepithema*, *Prenolepis* and *Polyergus* – 1;
Genera: *Amblyopone*, *Hypoponera*, *Ponera*, *Proceratium*, *Leptothorax*, *Myrmoxenus*, *Strongylognathus*, *Tapinoma*, *Plagiolepis* and *Lepisiota* – 2;
Genera: *Aphaenogaster*, *Crematogaster*, *Cardiocondyla*, *Bothriomyrmex* and *Cataglyphis* – 4;
Genus: *Proformica* – 5;
Genus: *Tetramorium* – 6;
Genus: *Messor* – 7;
Genus: *Camponotus* – 14;
Genus: *Myrmica* – 15;
Genus: *Formica* – 18;
Genus: *Temnothorax* – 20;
Genus: *Lasius* – 21.

Compared with the "Fauna of Bulgaria" (Atanassov and Dlusskij 1992), this catalog contains 51 more ant species and summarizes the published data for all 163 species, found in Bulgaria.

In the monograph of Atanassov and Dlusskij (1992) 27 species, recorded for Bulgaria before 1992, are missed. Some of them are included as synonyms or they figure in the determination keys. Four of them, *Proceratium numidicum, Messor concolor, Temnothorax nigriceps* and *Cardiocondyla nigra*, were recorded for Bulgaria without exact localities till 1992. *Lasius myops* was conidered by Atanassov and Dlusskij (1992) as junior synonym of *L. flavus* and believed that previous records of *Proformica nasuta* for Bulgaria belong to *P. striaticeps* (see also Notes to *P. nasuta* in Catalogue).

Atanassov and Dlusskij (1992) discussed that it is possible to find some ant species on the Bulgarian territory – *T. madeirense* (as *Tapinoma ambiguum*), *Crematogaster scutellaris*, *Lasius distinguendus* and *Lepisiota splendens* (as *Acantholepis splendens*). The last two are included into the determination keys as well.

The presence of genera *Chalepoxenus, Myrmoxenus* and *Harpagoxenus* in Bulgaria was suggested by Atanassov and Dlusskij (1992), and these three genera are included only into the key for genera.

On the other hand, 25 species were additionally recorded to Bulgaria from 1992 till 2009 (2010 part); these are:

Ponera testacea (Csősz and Seifert 2003)
Pyramica baudueri (Bezděčka and Bezděčková 2009)
Myrmica constricta (Seifert et al. 2009)
Myrmica lonae (Seifert 2000b)

Myrmica vandeli (Stankiewicz and Antonova 2005)
Messor capitatus (Markó and Csősz 2002)
Crematogaster auberti (Lapeva-Gjonova in press(b))
Harpagoxenus sublaevis (Antonova 2009)
Temnothorax crassispinus (Seifert 1995)
Temnothorax graecus (MIZ - Warsaw, Poland, unpublished data)
Temnothorax cf. *korbi* (MIZ - Warsaw, Poland, unpublished data)
Temnothorax saxonicus (Seifert 1995)
Temnothorax sordidulus (Seifert 2006)
Temnothorax tauricus (Radchenko 1994, 1995a)
Myrmoxenus gordiagini (Buschinger and Douwes 1993)
Myrmoxenus ravouxi (Buschinger and Douwes 1993)
Tetramorium diomedeum (Csősz and Schulz 2010)
Tetramorium moravicum (Steiner et al. 2005)
Bothriomyrmex menozzii (Csősz and Markó 2005)
Lasius neglectus (Seifert 2000a)
Lasius paralienus (Seifert 1992)
Lasius platythorax (Antonova and Penev 2006)
Lasius psammophilus (Antonova and Penev 2006)
Camponotus aegaeus (Lapeva-Gjonova in press(b))
Camponotus gestroi (Lapeva-Gjonova in press(b))

Till now, several species were recorded for Bulgaria without defined localities, and we did not find them in any investigated collections:

Proceratium numidicum (Agosti and Collingwood 1987a)
Temnothorax nigriceps (Agosti and Collingwood 1987a)
Cardiocondyla nigra (Agosti and Collingwood 1987a, Radchenko 1995b)
Lepisiota splendens (Agosti and Collingwood 1987a)
Lasius meridionalis (Agosti and Collingwood 1987a, Atanassov and Dlusskij 1992).

Finally, we propose to exclude from the Bulgarian myrmecofauna two species, recorded earlier.

Tetramorium meridionale Emery, 1870 was recorded for Vitosha Mt. by Atanassov (1952). Based on the modern data, this somewhat enigmatic species is distributed in the West Mediterranean region (Iberian, southern France, Italy). It was recorded also for Crimea and even for Ural region (Nasonov 1889, Ruzsky 1905), but these records seem doubtful (see Radchenko 1992a, b, Sanetra et al. 1999).

Formica fuscocinerea Forel, 1874 was considered by most authors for many tens of years as a mountain Central European and Balkans subspecies of *F. cinerea* (e.g. see Dlussky 1967), but Seifert (2002b) considered it as a good species, which is locally distributed in the Alps and Northern Apennines.

Comparative analysis of the ant fauna of the different regions of Bulgaria

We compare ant faunas of the natural regions of Bulgaria, as proposed by Hubenov (1997) (Map 1, Map 76 and Appendix III). Different regions of the country, and even different parts of a single region, have been studied to a variable extent, and there are many places where the ant fauna has been investigated insufficiently. Thus, currently we have no possibility to make a proper and detailed comparison of the ant faunas and their similarity across different regions, however our data might be useful for planning further investigations regarding the distribution of ants in Bulgaria.

The best studied area is the Rilo-Rhodopi region with 143 species from ca. 120 localities. The subregions Middle Struma Valley (line Krupnik-Sandanski-Petrich, 76 species) and Rhodopi Mountains (95 species) are also well studied areas with high species richness.

At the same time, Golo Bardo (1 species), Verila (5), Viskyar (5), Sushtinska (5) and Surnena (2) Sredna Gora mountains, Sturgach (1), Konyavska mountain (1), Sakar (3), Tundzha valley (2), Mesta valley (5) and Boboshevo-Simitli valley (7) are poorly studied and only a few ant species are recorded. There are almost no data for Central Danubian Plain, Ruy, Maleshevska, Zemenska and Vlahina mountains.

Despite the fact that the Transitional region is a larger and more diverse topographically, as well as climatically than the Rilo-Rhodopi region, only 115 species are reported from there. Most probably, this is the result of lower level of the myrmecological investigation carried out there. Only Sofia Basin (62 species), Vitosha (48), Plana (50), Lozenska (40) and Strandzha (40) mountains are sufficiently studied. Almost all information on myrmecofauna of Vitosha subregion arises from investigations in the following areas (Sofia Basin, Vitosha and Plana) and accordingly the greatest number of species have been reported there – 84. The worst studied area is the Kraishte-Konyavo subregion from the Transitional region, where only 19 ant species from just 8 localities are known, and 7 of these localities are in Zemen gorge.

The number of ant species recorded from the Stara Planina Range system is similar to that of Transitional region. The total number found in both subregions (Predbalkan and Stara Planina) is 88 species, 76 of which are given for Stara Planina Mountains only.

The territory of the Black Sea coast region is the smallest among all natural regions of Bulgaria and it is sufficiently studied: 75 ant species from ca. 27 localities are recorded.

Contrary to this, only 21 species are recorded from the Danubian Plain, which has an area of 31 523 square kilometers.

In general, we may consider that the ant fauna of Bulgaria is quite rich, which is confirmed by its comparison with adjacent regions.

Thus, 103 ant species from 34 genera are recorded for Romania (Markó et al. 2006), although the authors expect more species will be found in the country in the future. 140 species are known from Slovenia and 129 – from Croatia (Bračko 2006,

2007). The fauna of Serbia and Montenegro contains totally 160 species, 133 of which are found in Montenegro (Karaman 1998, 2004, Petrov 2004, 2006, 2008); 78 species are known from Macedonia (Doflein 1920, Petrov 1994, Karaman 2002, 2009). Agosti and Collingwood (1987a) recorded for Thracian part of Turkey 90 species, while more correct data of Çamlitepe and Aktaç (1987) and Aktaç et al. (1994) include 76 species. Finally, Greek and Turkish faunas are estimated at about 300 ant species each (Aktaç 1976, Petrov 2006, Kiran and Aktaç 2006, 2007, our unpublished data).

Finally, we may conclude: the Bulgarian ant fauna is rich and adequately studied as a whole, while several regions of the country require additional investigations. Such poorly myrmecologically elaborated areas are the Danubian Plain, Thracian Lowland, Kraishte-Konyavo and Tundzha-Strandzha subregions; moreover, ants of the Central Danubian Plain, Ruy, Maleshevska, Zemenska and Vlahina mountains have not been studied at all.

In general, Bulgarian ant fauna is richer than that of Romania, similar by the species number to those of many former Yugoslavian countries, but essentially poorer than faunas of Greece and Turkey. This fact is not surprising, regarding the geographical location and landscapes of Bulgaria. Furthermore, the core of Bulgarian myrmecofauna is composed by South European elements, but not Mediterranean species, and it is more closely related to the faunas of northern territories than to Greek fauna.

Conservation status of the species

Totally, 13 ant species found in Bulgaria, are included in IUCN Red List of Threatened Species. Five of them (*Anergates atratulus*, *Chalepoxenus muellerianus*, *Myrmoxenus ravouxi*, *M. gordiagini* and *Strongylognathus kratochvili*) are placed to the category Vulnerable D2: "Population is characterized by an acute restriction in its area of occupancy (typically less than 100 km^2) or in the number of locations". *Formicoxenus nitidulus* and *Harpagoxenus sublaevis* are also Vulnerable, but in A2c category: "A reduction of at least 20%, projected or suspected to be met within the next ten years or three generations, whichever is the longer, based on a decline in area of occupancy, extent of occurrence and/or quality of habitat". The status of another five species (*Formica aquilonia*, *F. lugubris*, *F. polyctena*, *F. pratensis* and *F. rufa*) is Lower Risk/near threatened: "Taxa which do not qualify for Conservation Dependent, but which are close to qualifying for Vulnerable". *Formica rufa* is included in the Annex 2 and 3 of the Bulgarian Biodiversity Act (2002) as well (protected on the entire territory of the country). *Temnothorax recedens* is cited in the category Lower Risk/least concern: "Taxa which do not qualify for Conservation Dependent or Near Threatened".

The IUCN's classifications, based on the sizes of geographic ranges or the patterns of habitat occupancy, is complicated by problems of spatial scale. All of the above mentioned species need their conservation status at national level up-dated. We do not have enough data yet about the distributions and populations of these species in Bulgaria or on how their status in Bulgaria relates to their global popula-

tion. Further investigations and accurate mapping would supply data that would clarify the situation.

Acknowledgements

We kindly thank A. Schultz for his agreement to include the two species determined by him in MIZ. We are deeply grateful to Mr. Gordon Ramel (UK) for the linguistic help. A revision of the Bulgarian ant material in MIZ (Warsaw, Poland) was made by V. Antonova due to Synthesys Grant PL-TAF-2589 (2007). The work is partly supported by Ministry of Education and Science (Bulgaria) Grants: BG 051 PO001-3.3.04/41, DO 02-159/16.12.08 (A. Lapeva-Gjonova) and TKB-1616/2006 (V. Antonova). We are grateful to Prof. Dr. W. Czechowski – project coordinator of two inter-academy contracts between Polish and Bulgarian Academy of Sciences (V. Antonova and A. Radchenko). We express our great thanks to both referees and D. Agosti for the valuable critical remarks.

References

Agosti D (1990) Review and reclassification of *Cataglyphis* (Hymenoptera, Formicidae). Journal of Natural History 24: 1457–1505.

Agosti D, Collingwood CA (1987a) A provisional list of the Balkan ants (Hym. Formicidae) and a key to the worker caste. I. Synonymic list. Mitteilungen der Schweizerischen Entomologischen Gesellschaft 60: 51–62.

Agosti D, Collingwood CA (1987b) A provisional list of the Balkan ants (Hym. Formicidae) and a key to the worker caste. II. Key to the worker caste, including the European species without the Iberian. Mitteilungen der Schweizerischen Entomologischen Gesellschaft 60: 261–293.

Aktaç N (1976) Studies on the myrmecofauna of Turkey. 1. Ants of Siirt, Bodrum and Trabzon. Istanbul Universitesi Fen Fakultesi Mecmuasi (B) 41 (1–4): 115–135.

Aktaç N, Aras A, Çamlitepe Y (1994) Ants of Thracian part of Turkey. Bios (Macedonia, Greece) 2: 203–209.

Antonova V (2004) Compound nests and mixed colonies of ant species (Hymenoptera, Formicidae) in Sofia - Bulgaria. In: Penev L, Niemela J, Kotze J, Chipev N (Eds) Ecology of the City of Sofia. Species and Communities in Urban Environment, Pensoft Publishers, Sofia-Moscow, 423–428.

Antonova V (2005) Species diversity and distribution of ants in different habitats in the parks of the city of Sofia. In: Chipev N, Bogoev V (Eds) Biodiversity, Ecosystems, Global changes, I-st National Scientific Conference in Ecology, Petekston Press, Sofia, 231–236.

Antonova V (2009) First record of the slave-maker ant *Harpagoxenus sublaevis* (Nylander, 1849) from Bulgaria (Hymenoptera: Formicidae). Myrmecological News 12: 1–2.

Antonova V, Penev L (2006) Changes in the zoogeographical structure of ants (Hymenoptera: Formicidae) caused by urban pressure in the Sofia region (Bulgaria). Myrmecological News 8: 271–276.

Antonova V, Penev L (2008) Classification of ant assemblages in green areas of Sofia. Acta Zoologica Bulgarica 60 Suppl. 2: 103–110.

Antonova V, Radchenko A, Czechowski W, Biserkov V (in press) GIS-based spatial analyses of the myrmecofauna (Hymenoptera: Formicidae) of Strandza Mountain (SE Bulgaria).

Atanassov N (1934) [Beitrag zum Studium der Ameisenfauna Bulgariens (Formicidae)]. Bulletin de la Société Entomologique de Bulgarie 8: 159–173. [in Bulgarian].

Atanassov N (1936) [Zweiter Beitrag zum Studium der Ameisenfauna Bulgariens (Formicidae)]. Bulletin de la Société Entomologique de Bulgarie 9: 211–236. [in Bulgarian].

Atanassov N (1952) [Gesetzmässigkeiten in der Verbreitung und biologische Beobachtungen an Ameisen des Witoscha Gebirges]. Works of Natural Science Field Station of Vitosha Mountain 1: 1–214. [in Bulgarian].

Atanassov N (1957) Recherches sur la biologie de *Liometopum microcephalum* (Hymenoptera, Formicidae) en Bulgarie. Bulletin de la Société Entomologique de Mulhouse 501: 43–47.

Atanassov N (1964) [Investigation on the systematic and ecology of ants (Formicidae, Hymenoptera) from Petrich region (SW Bulgaria)]. Bulletin de l'Institut et Musée de Zoologie 15: 77–104. [in Bulgarian].

Atanassov N (1965) Etude sur la biologie et la répartition de *Monomorium pharaonis* L. (Hymenoptera, Formicidae) en Bulgarie et dans la péninsule balkanique. Bulletin de la Société Entomologique de Mulhouse 885: 86–95.

Atanassov N (1974) Besonderheiten der Nahrungszusammensetzung von *Formica rufa* L. und *Formica lugubris* Zett. in Bulgarien. Waldhygiene 10: 183–185.

Atanassov N (1979) Jahreszeitliche Dynamik im Nahrungseintrag von *Formica rufa* L. (Hymenoptera, Formicidae). Waldhygiene 13 (4): 97–99.

Atanassov N (1982) Neue Ameisen aus den Gattungen *Messor* und *Cataglyphis* (Hymenoptera, Formicidae) für die Fauna Bulgariens. Waldhygiene 14: 209–214.

Atanassov N (1983) Der Einfluß von Brunbären (*Ursus arctos* L.) auf die Nester von Waldameisen der Gattung *Formica* in Bulgarien. Waldhygiene 15: 7–14.

Atanassov N (1990) [Impact of the bear (*Ursus arctos* L.) on the ants of *Formica* genus in Bulgaria]. Priroda 4: 46–49. [in Bulgarian].

Atanassov N, Bulgurkov K (1955) [Studies on species composition and ecology of insects and mammals of field-protected zones in South Dobrudzha]. Symposium of the expedition on the field-protected zones in Dobrudzha during 1952 year: 295–315. [in Bulgarian].

Atanassov N, Dlusskij G (1992) [Fauna Bulgarica. 22. Hymenoptera, Formicidae]. Bulgarian Academy of Sciences (Ed), Sofia, 310 pp. [in Bulgarian].

Atanassov N, Martino V, Peshev G (1955) [Materials for zoocenological zoning of Bulgaria]. Bulletin de l'Institut et Musée de Zoologie 4–5: 435–450. [in Bulgarian].

Atanassov N, Vasileva E (1976) [New and rare ant species (Hymenoptera, Formicidae) in Bulgaria fauna]. In: Peshev G (Ed) Terrestrial fauna of Bulgaria. Materials. Bulgarian Academy of Sciences, Sofia, 217–222. [in Bulgarian].

Baroni Urbani C (1977) Les espèces europèennes du genre *Proceratium* Roger (Hymenoptera, Formicidae). Mitteilungen der Schweizerischen Entomologischen Gesellschaft 50: 91–93.

Baroni Urbani C (1978) Contributo alla conoscenza del genere *Amblyopone* Erichson (Hymenoptera: Formicidae). Mitteilungen der Schweizerischen Entomologischen Gesellschaft 51: 39–51.

Baroni Urbani C, De Andrade ML (2003) The ant genus *Proceratium* in the extant and fossil record (Hymenoptera: Formicidae). Museo Regionale di Scienze Naturali, Monografie 36: 1–480.

Baroni Urbani C, De Andrade ML (2007) The ant tribe Dacetini: Limits and constituent genera, with descriptions of new species (Hymenoptera, Formicidae). Annali del Museo Civico di Storia Naturale Giacomo Doria 99: 1–191.

Barrett KEJ (1970) Ants from Hungary and Bulgaria. The Entomologist 130: 139–140.

Bechev DN, Stoyanova AM (2004) [Localities of invertebrates with conservation importance in the Rhodopi Mt. (Bulgaria)]. Scientific works, University of Plovdiv, Animalia 40 (6): 19–25. [in Bulgarian].

Bezděčka P, Bezděčková K (2009) First record of *Pyramica baudueri* (Emery, 1875) (Hymenoptera: Formicidae) from Bulgaria. Myrmecological News 13: 1–2.

Bobev R (1972) [Red wood ants – a main part of the biological insect pest control]. Rastitelna Zashtita 11: 9–13. [in Bulgarian].

Bobev R (1973) [Ecological and systematic features in the distribution of few wood ants in Central and West Rhodopy Mountains]. Gorsko Stopanstvo 2: 38–41. [in Bulgarian].

Bolton B (1995) A new general catalogue of the ants of the world. Harvard University Press, Cambridge, MA, 504 pp.

Bolton B (1999) Ant genera of the tribe Dacetonini (Hynemoptera, Formicidae). Journal of the Natural History 33: 1639–1689.

Bolton B (2000) The ant tribe Dacetini. Memoirs of the American Entomological Institute 65: 1–1028.

Bolton B (2003) Synopsis and classification of Formicidae. Memoirs of the American Entomological Institute 71: 1–370.

Bolton B, Alpert G, Ward PS, Naskrecki P (2006) Bolton's Catalogue of Ants of the World: 1758–2005. Harvard University Press, Cambridge, Massachusetts, London, England (CD ROM).

Borisova N, Antonova V, Delov V, Dimitrov D (2005) Using GIS and remote sensing in biogeography assessment in the karst terrain of Chepan Mountain and Dragoman marshland (W Bulgaria). In: Chipev N, Bogoev V (Eds) Biodiversity, Ecosystems, Global changes, I-st National Scientific Conference in Ecology, Petekston Press, Sofia, 75–82.

Borowiec ML (2007) *Camponotus truncatus* (Spinola, 1808) (Hymenoptera: Formicidae) - ant species new to Poland. Polish Journal of Entomology 76: 41–45.

Bračko G (2006) Review of the ant fauna (Hymenoptera: Formicidae) of Croatia. Acta Entomologica Slovenica 14 (2): 131–156.

Bračko G (2007) Checklist of the ants of Slovenia (Hymenoptera: Formicidae). Natura Sloveniae 9 (1): 15–24.

Brown WL (1958) Contributions toward a reclassification of the Formicidae. II. Tribe Ectatommini (Hymenoptera). Bulletin of the Museum of Comparative Zoology of Harvard College 118: 175–362.

Bulgarian Biodiversity Act (2002) Darzhaven Vestnik 77 (9): 49. [in Bulgarian].

Buschinger A, Douwes P (1993) Socially parasitic ants of Greece. Biologia Gallo-Hellenica 20: 183–189.

Buschinger A, Ehrhardt W, Fischer K, Ofer J (1988) The slave-making ant genus *Chalepoxenus* (Hymenoptera, Formicidae). I. Review of literature, range, slave species. Zoologische Jahrbücher. Abteilung für Systematik, Ökologie und Geographie der Tiere 115: 383–401.

Çamlitepe Y, Aktaç N (1987) Trakya bölgesi orman karinca faunasi üzerinde araştirmalar. Turkiye I. Entomoloji Kongresi, Izmir 3: 685–694. [in Turkish].

Casevitz-Weulersse J (1990) Etude systématique de la myrmécofaune Corse. Bulletin du Museum National d'Histoire Naturelle 12: 415–442.

Csősz S, Markó B (2004) Redescription of *Tetramorium hungaricum* Röszler, 1935, a related species of *T. caespitum* (Linnaeus, 1758) (Hymenoptera: Formicidae). Myrmecological News 6: 49–59.

Csősz S, Markó B (2005) European ant species (Hymenoptera: Formicidae) in the ant collection of the Natural History Museum of Sibiu (Hermannstadt/Nagyszeben), Romania II. Subfamily Formicinae. Annales Historico-Naturales Musei Nationalis Hungarici 97: 225–240.

Csősz S, Radchenko A, Schulz A (2007) Taxonomic revision of the Palaearctic *Tetramorium chefketi* species complex (Hymenoptera: Formicidae). Zootaxa 1405: 1–38.

Csősz S, Schulz A (2010) A taxonomic review of the Palaearctic *Tetramorium ferox* species-complex (Hymenoptera, Formicidae). Zootaxa 2401: 1–29.

Csősz S, Seifert B (2003) *Ponera testacea* Emery, 1895 stat. nov. - A sister species of *P. coarctata* (Latreille, 1802) (Hymenoptera: Formicidae). Acta Zoologica Academiae Scientiarum Hungaricae 49 (3): 211–223.

Czechowska W, Radchenko A, Czechowski W (1998) Ecological and taxonomic notes on *Leptothorax nadigi* Kutter, 1925 (Hymenoptera, Formicidae) an ant species new to Poland. Annales Zoologici 48: 119–123.

Czechowski W, Radchenko A, Czechowska W (2002) The ants of Poland. Museum and Institute of Zoology, Warsaw, 200 pp.

Del Toro I, Pacheco JA, Mackay WP (2009) Revision of the ant genus *Liometopum* (Hymenoptera: Formicidae). Sociobiology 53: 295–372.

Dlussky GM (1967) [Ants of the genus *Formica* (Hymenoptera: Formicidae g. *Formica*)]. Institut Morfologii Zhivotnykh, Akademiya Nauk SSSR, Moscow, 236 pp. [in Russian].

Dlussky GM (1969) [Ants of the genus *Proformica* Ruzs. of the USSR and contiguous countries (Hymenoptera, Formicidae)]. Zoologicheskii Zhurnal 48: 218–232. [in Russian].

Dlussky GM, Soyunov OS (1988) [Ants from *Temnothorax* Mayr genus (Hymenoptera, Formicidae) USSR]. Izvestia Akademii Nauk Turkmenskoi SSR, Biology 4: 29–37. [in Russian].

Doflein F (1920) Mazedonische Ameisen. Beobachtungen über ihre Lebensweise. Verlag von Gustav Fischer Jena: 1–9.

DuBois MB (1993) What's in a name? A clarification of *Stenamma westwoodi*, *S. debile* and *S. lippulum* (Hymenoptera: Formicidae: Myrmicinae). Sociobiology 21: 299–334.

Emery C (1914) Wissenschaftliche Ergebnisse der Bearbeitung von O. Leonhards Sammlungen. 5. Südeuropäische Ameisen (Hym.). Entomologische Mitteilungen 3: 156–159.

Emery C (1922) Hymenoptera. Fam. Formicidae. Subfam. Myrmicinae. [part]. Genera Insectorum 174 B: 95–206.

Espadaler X, Tartally A, Schultz R, Seifert B, Nagy C (2007) Regional trends and preliminary results on the local expansion rate in the invasive garden ant, *Lasius neglectus* (Hymenoptera, Formicidae) Insectes Sociaux 54: 293–301 http://www.creaf.uab.es/xeg/Lasius/

Forel A (1892) Die Ameisenfauna Bulgariens. (Nebst biologischen Beobachtungen.) Verhandlungen der Zoologisch-Botanischen Gesellschaft in Wien 42: 305–318.

Forel A (1895) Südpalaearctische Ameisen. Mitteilungen der Schweizerischen Entomologischen Gesellschaft 9: 227–234.

Forel A (1911) Fourmis nouvelles ou intéressantes. Bulletin de la Societe Vaudoise des Sciences Naturelles 47: 331–400.

Gateva R (1974) [Data on the ecology and biology of *Formica lugubris* Zett. and its advantage]. Gorsko Stopanstvo 4: 5–9. [in Bulgarian].

Gateva R (1975) [Morphological, biological and ecological characteristics of ants of the genus *Formica*, found in Bulgaria]. Gorskostopanska Nauka 12 (6): 48–59. [in Bulgarian].

Gateva R (1978) [Phenology of the forest ants]. Gorsko Stopanstvo 1: 48–51. [in Bulgarian].

Güsten R, Schulz A, Sanetra M (2006) Redescription of *Tetramorium forte* Forel, 1904 (Insecta: Hymenoptera: Formicidae), a western Mediterranean ant species. Zootaxa 1310: 1–35.

Hlaváč P, Bekchiev R, Růžička J, Lackner T (2007) Contribution to the knowledge of myrmecophilous beetles (Coleoptera) of Bulgaria. Acta Societatis Zoologicae Bohemicae 71: 127–132.

Hubenov ZK (1997) Possibilities for using of a system from the really defined natural territories for the faunistic researches in Bulgaria. Acta Zoologica Bulgarica 49: 5–9.

Hubenov Z, Beshovski V, Beshkov S, Kolarov J, Kumanski K, Popov A, Vassileva E (1998) Insects of Bulgaria, Part 2: Blattoidea, Mantoidea, Isoptera, Orthoptera, Dermaptera, Embioptera, Megaloptera, Raphidioptera, Neuroptera, Mecoptera, Hymenoptera, Trichoptera, Lepidoptera and Diptera. In: Meine C (Ed) Bulgaria's Biological Diversity: Conservation Status and Needs Assessment, Biodiversity Support Program, 1–2: 211–259.

International Commission on Zoological Nomenclature (1999) International code of zoological nomenclature. Fourth edition. London: The International Trust for Zoological Nomenclature, 306 pp.

IUCN (2009) IUCN Red List of Threatened Species. Version 2009.2. www.iucnredlist.org.

Karaman M (1998) Data about investigations on myrmecofauna (Hymenoptera, Formicidae) in Montenegro. Glasnik Republičkog Zavoda za Zaštitut Prirode, Prirodnjačkog Muzeja Podgorica 26: 55–62.

Karaman M (2002) [Contribution to the knowledge of ant fauna (Hymenoptera, Formicidae) in Demir-Kapiya gorge (Vardar river, Macedonia)]. Protection of Nature, Belgrade 53 (2): 37–47. [in Serbian].

Karaman M (2004) Checklist of known species of ants (Hymenoptera, Formicidae) in the fauna of Montenegro. Natura Montenegrina Podgorica 3: 83–92.

Karaman M (2009) An introduction to the ant fauna of Macedonia (Balkan Peninsula), a check list (Hymenoptera, Formicidae). Natura Montenegrina Podgorica 8 (3): 151–162.

Keremidchiev M, Ganchev G, Vatov V, Bobev R (1971) [Bioecological characteristics of the red wood ants of genus *Formica*]. Gorsko Stopanstvo 10: 25–31. [in Bulgarian].

Keremidchiev M, Vatov V, Ganchev G, Bobev R (1972) [Distribution results from the red wood ants of genus *Formica*]. Gorsko Stopanstvo 12: 13–18. [in Bulgarian].

Kiran K, Aktaç N (2006) The vertical distribution of the ant fauna (Hymenoptera: Formicidae) of the Samanli Mountains, Turkey. Linzer Biologische Beiträge 38 (2): 1105–1122.

Kiran K, Aktac N (2007) The social parasitic ant *Plagiolepis xene* Stärcke, 1936 new to Turkey (Hymenoptera: Formicidae). Myrmecological News 10: 110.

Lapeva-Gjonova A (2004a) Ants (Hymenoptera: Formicidae) from the Eastern Rhodopes (Bulgaria). In: Beron P, Popov A (Eds) Biodiversity of Bulgaria. 2. Biodiversity of Eastern Rhodopes (Bulgaria and Greece). Pensoft Publishers & National Museum of Natural History, Sofia, 507–513.

Lapeva-Gjonova A (2004b) Pselaphinae (Coleoptera: Staphylinidae) from ant nests (Hymenoptera: Formicidae) in Southwestern Bulgaria. Acta Zoologica Bulgarica 56 (1): 69–73.

Lapeva-Gjonova A (in press(a)). Ants (Hymenoptera, Formicidae) from Western Rhodopes Mountain (Bulgaria). In: Beron P, Popov A (Eds) Biodiversity of Bulgaria. 4. Biodiversity of Western Rhodopes (Bulgaria and Greece). Pensoft Publishers & National Museum of Natural History, Sofia.

Lapeva-Gjonova A (in press(b)). First records of three ant species (Hymenoptera: Formicidae) from Bulgaria. Myrmecological News 14: 1–3.

Lapeva-Gjonova A, Atanasova M (2004) A faunistic investigation of the ants (Hymenoptera, Formicidae) in the city of Sofia. In: Penev L, Niemala J, Kotze DJ, Chipev N (Eds) Ecology of the City of Sofia. Species and Communities in an Urban Environment. Pensoft, Sofia, 417–422.

Markó B, Csősz S (2002) Die europäischen Ameisenarten (Hymenoptera: Formicidae) des Hermannstädter (Sibiu, Rumänien) Naturkundemuseums I.: Unterfamilien Ponerinae, Myrmicinae und Dolichoderinae. Annales Historico-Naturales Musei Nationalis Hungarici 94: 109–121.

Markó B, Sipos B, Csősz S, Kiss K, Boros I, Gallé L (2006) A comprehensive list of the ants of Romania (Hymenoptera: Formicidae). Myrmecological News 9: 65–76.

Nasonov NV (1889) Material on the natural history of ants chiefly of Russia. 1. Material on the ants of Russia. Izvestiya Imperatorskago Obshchestva Lyubitelei Estestvoznaniya, Antropologii i Etnografii 58: 1–78. [in Russian].

Otto D, Keremidchiev M, Vatov V (1962) [The wood ants in Bulgaria and trends of their use in biological insect pest control in the forests]. Gorsko Stopanstvo 12: 24–28. [in Bulgarian].

Petrov IZ (1994) Supplement to the Doflein's list of Macedonian ants (Formicidae, Hymenoptera). Archives of Biological Sciences Belgrade 46 (1–2): 11–12.

Petrov IZ (2004) A list of currently known ant species (Formicidae, Hymenoptera) of Serbia. Archives of Biological Sciences Belgrade 56: 121–125.

Petrov IZ (2006) [The ants of Serbia and Montenegro. Serbian Academy of Sciences and Art. Monographs]. Department of Chemical and Biological Sciences 546 (4): 1–136. [in Serbian].

Petrov IZ (2008) Notes on the currently known ant species (Hymenoptera: Formicidae) of Montenegro. Bulletin of the Natural History Museum 1: 243–254.

Petrov IZ, Collingwood CA (1993) *Formica balcanina* sp. n., a new species related to the *Formica cinerea*-group (Hymenoptera: Formicidae). European Journal of Entomology 90: 349–354.

Pisarski B (1962) Notes synonymiques sur les espèces balcaniques du genre *Cardiocondyla* Emery (Hymenoptera, Formicidae). Bulletin de l'Academie Polonaise des Sciences Cl. II–10 (8): 331–333.

Pisarski B (1966) Études sur les fourmis du genre *Strongylognathus* Mayr (Hymenoptera, Formicidae). Annales Zoologici 23: 509–523.

Radchenko AG (1989) [Ants of the genus *Plagiolepis* of the European part of the USSR]. Zoologicheskii Zhurnal 68: 153–156. [in Russian].

Radchenko AG (1991) [Ants of the genus *Strongylognathus* Mayr (Hymenoptera, Formicidae) of the fauna of USSA]. Zoologicheskii Zhurnal 70 (10): 84–90. [in Russian].

Radchenko AG (1992a) [The ants of the genus *Tetramorium* Mayr (Hymenoptera, Formicidae) of the fauna of USSR]. 1. Zoologicheskii Zhurnal 71 (8): 39–49. [in Russian].

Radchenko AG (1992b) [The ants of the genus *Tetramorium* Mayr (Hymenoptera, Formicidae) of the fauna of USSR]. 2. Zoologicheskii Zhurnal 71 (8): 50–58. [in Russian].

Radchenko AG (1994) [A key to the species of the genus *Leptothorax* (Hymenoptera, Formicidae) of Central and Eastern Palaearctic]. Zoologicheskii Zhurnal 73 (7–8): 146–158. [in Russian].

Radchenko AG (1995a) [A review of the ant genus *Leptothorax* (Hymenoptera, Formicidae) of Central and Eastern Palaearctics. Communication 2. Groups tuberum, corticalis, affinis, clypeatus and singularis]. Vestnik Zoologii 2 - 3: 14–21. [in Russian].

Radchenko AG (1995b) [Palaearctic ants of *Cardiocondyla* Emery genus (Hymenoptera, Formicidae)]. Entomologicheskoe Obozrenie 74 (2): 447–455. [in Russian].

Radchenko AG (1997a) [A review of ants of the genus *Camponotus* (Hymenoptera, Formicidae). Subgenus *Camponotus* s. str.]. Zoologicheskii Zhurnal 76 (5): 554–564. [in Russian].

Radchenko AG (1997b) [A review of ants of the subgenus *Myrmentoma* of the genus *Camponotus* Mayr (Hymenoptera, Formicidae) of the Asian part of Palaearctic]. Zoologicheskii Zhurnal 76 (6): 703–711. [in Russian].

Radchenko AG (2000) What is "*Leptothorax nylanderi*" (Hymenoptera: Formicidae) in Russian and former Soviet literature? Annales Zoologici 50 (1): 43–45.

Radchenko AG (2001) [The phylogeny and faunogenesis of the genus *Cataglyphis* (Hymenoptera, Formicidae)]. Entomologicheskoe Obozrenie 80 (4): 885–895. [in Russian].

Radchenko A (2007) Fauna Europaea: Formicidae. In: Noyes J (Ed) Fauna Europaea: Hymenoptera: Apocrita. Fauna Europaea version 1.3. http://www.faunaeur.org [accessed 1.II.2010]

Radchenko A, Antonova V (2004) First record of *Myrmica rugolososcabrinodis* Karawajew, 1929 (Hymenoptera: Formicidae) from Bulgaria. Myrmecological News 6: 19–21.

Radchenko A, Czechowski W, Czechowska W (1998) The genus *Tetramorium* Mayr (Hymenoptera, Formicidae) in Poland - a survey of species and a key for their identification. Annales Zoologici 44: 107–118.

Radchenko AG, Elmes GW (2003) A taxonomic revision of the socially parasitic *Myrmica* ants (Hymenoptera: Formicidae) of the Palaearctic region. Annales Zoologici 53: 217–243.

Radchenko A, Elmes GW (2004) Taxonomic notes on the scabrinodis-group of *Myrmica* species (Hymenoptera: Formicidae) living in eastern Europe and western Asia, with a description of a new species from Tien Shan. Trudy Russkogo Entomologicheskago Obshchestva 75 (1): 222–233.

Radchenko A, Elmes GW (2009). Important alterations in the taxonomy of the ant genus *Myrmica* (Hymenoptera, Formicidae), based on the investigation of the M. Ruzsky's type

specimens, preserved in the Museo Civico di Storia Naturale "Giacomo Doria" in Genoa. Annali del Museo Civico di Storia Naturale "G. Doria" 100: 501–525.

Ronketi G, Penev C (1966) [Untersuchungen zur Verteilung der Ameisen aus der Gruppe *Formica rufa* im Nord-Osten Bulgariens]. Rastitelna Zashtita 14 (10–11): 29–31. [in Bulgarian].

Röszler JP (1951) Myrmecologisches aus dem Jahre 1938. Zoologischer Anzeiger 146: 88–96.

Ruzsky MD (1905) [The ants of Russia. Systematics, geography and data on biology of the Russian ants]. Part I. Trudy Obschestva Estestvoispytateley pri Imperatorskom Kazanskom Universitete 38 (4–6): 1–800. [in Russian].

Sadil JV (1952) A revision of the Czechoslovak forms of the genus *Myrmica* Latr. (Hym.). Sbornik Entomologického Oddéleni Národního Musea v Praze 27: 233–278.

Sanetra M, Güsten R, Schulz A (1999) On the taxonomy and distribution of Italian *Tetramorium* species and their social parasites (Hymenoptera Formicidae). Memorie della Societa Entomologica Italiana 77: 317–357.

Schlick-Steiner BC, Steiner FM, Seifert B, Straka U (2002) *Lasius platythorax* as a host of *Lasius distinguendus* (Hymenoptera, Formicidae). Insectes Sociaux 49: 299.

Schlick-Steiner BC, Steiner FM, Bračko G, Paill W, Seifert B (2003) The temporary social parasite *Lasius bicornis* (Förster, 1850) new to Slovenia, and *Myrmica bessarabica* Nassonov, 1889 corrected into *M. specioides* Bondroit, 1918 (Hymenoptera: Formicidae). Acta Entomologica Slovenica 11: 159–162.

Schlick-Steiner BC, Steiner FM, Konrad H, Marko B, Csősz S, Heller G, Ferencz B, Sipos B, Christian E, Stauffer C (2006a) More than one species of *Messor* harvester ants (Hymenoptera: Formicidae) in Central Europe. European Journal of Entomology 103 (2): 469–476.

Schlick-Steiner BC, Steiner FM, Moder K, Seifert B, Sanetra M, Dyreson E, Stauffer C, Christian E (2006b) A multidisciplinary approach reveals cryptic diversity in Western Palearctic *Tetramorium* ants (Hymenoptera: Formicidae). Molecular Phylogenetics and Evolution 40: 259–273.

Seifert B (1983) The taxonomical and ecological status of *Lasius myops* Forel (Hymenoptera, Formicidae) and first description of its males. Abhandlungen und Berichte des Naturkundemuseums Görlitz 57 (6): 1–16.

Seifert B (1984) A method for differentiation of the female castes of *Tapinoma ambiguum* Emery and *Tapinoma erraticum* (Latr.) and remarks on their distribution in Europa north of the Mediterranean Region. Faunistische Abhandlungen Staatliches Museum für Tierkunde in Dresden 11 (11): 151–155.

Seifert B (1988a) A taxonomic revision of the *Myrmica* species of Europe, Asia Minor, and Caucasus (Hymenoptera, Formicidae). Abhandlungen und Berichte des Naturkundemuseums Görlitz 62 (3): 1–75.

Seifert B (1988b) A revision of the European species of the ant subgenus *Chthonolasius* (Insecta, Hymenoptera, Formicidae). Entomologische Abhandlungen Museum für Tierkunde Dresden 51 (8): 143–180.

Seifert B (1989) *Camponotus herculeanus* (Linné, 1758) und *Camponotus ligniperda* (Latr., 1802) – Determination der weiblichen Kasten, Verbreitung und Habitatwahl in Mitteleuropa. Entomologische Nachrichten und Berichte 33: 127–133.

Seifert B (1990) Supplementation to the revision of European species of the ant subgenus *Chthonolasius* Ruzsky, 1913. Doriana, Genova 6 (271): 1–13.

Seifert B (1991) *Lasius platythorax* n. sp., a widespread sibling species of *Lasius niger* (Hymenoptera, Formicidae). Entomologia Generalis 16: 69–81.

Seifert B (1992) A taxonomic revision of the Palaearctic members of the ant subgenus *Lasius* s. str. (Hymenoptera, Formicidae). Abhandlungen und Berichte des Naturkundemuseums Görlitz 66 (5): 1–67.

Seifert B (1995) Two new Central European subspecies of *Leptothorax nylanderi* (Förster, 1850) and *Leptothorax sordidulus* Müller, 1923 (Hymenoptera: Formicidae). Abhandlungen und Berichte des Naturkundemuseums Görlitz 68 (7): 1–18.

Seifert B (1996) *Formica paralugubris* nov. spec. – a sympatric sibling species of *Formica lugubris* from the western Alps (Insecta: Hymenoptera: Formicidae: Myrmicinae). Reichenbachia Staatliches Museum für Tierkunde Dresden 31 (35): 193–201.

Seifert B (1997a) *Lasius nitidigaster* n. sp. - a new ant of the subgenus *Chthonolasius* Ruzsky (Hymenoptera: Formicidae). Annales Zoologici 46: 201–205.

Seifert B (1997b) *Formica lusatica* n. sp. - a sympatric sibling species of *Formica cunicularia* and *Formica rufibarbis* (Hymenoptera, Formicidae). Abhandlungen und Berichte des Naturkundemuseums Görlitz 69 (5): 3–16.

Seifert B (2000a) Rapid range expansion in *Lasius neglectus* (Hymenoptera, Formicidae) – an Asian invader swamps Europe. Mitteilungen aus dem Museum für Naturkunde Berlin, Deutsche Entomologische Zeitschrift 47: 173–179.

Seifert B (2000b) *Myrmica lonae* Finzi, 1926 - a species separate from *Myrmica sabuleti*, 1861 (Hymenoptera:Formicidae). Abhandlungen und Berichte des Naturkundemuseums Görlitz 72 (2): 195–205.

Seifert B (2000c) A taxonomic revision of the ant subgenus *Coptoformica* Mueller, 1923 (Hymenoptera, Formicidae). Zoosystema 22 (3): 517–568.

Seifert B (2002a) The "type" of *Myrmica bessarabica* Nassonov 1889 and the identity of *Myrmica salina* Ruzsky 1905 (Hymenoptera: Formicidae, Myrmicinae). Mitteilungen der Münchener Entomologischen Gesellschaft 92: 93–100.

Seifert B (2002b) A taxonomic revision of the *Formica cinerea* group (Hymenoptera: Formicidae). Abhandlungen und Berichte des Naturkundemuseums Görlitz 74 (2): 245–272.

Seifert B (2003a) The Palaearctic members of the *Myrmica schencki* group with description of a new species (Hymenoptera: Formicidae). Beiträge zur Entomologie 53: 141–159.

Seifert B (2003b) The ant genus *Cardiocondyla* (Insecta: Hymenoptera: Formicidae) - a taxonomic revision of the *C. elegans*, *C. bulgarica*, *C. batesii*, *C. nuda*, *C. shuckardi*, *C. stambuloffii*, *C. wroughtonii*, *C. emeryi* and *C. minutior* species groups. Annalen des Naturhistorischen Museums in Wien 104 (B): 203–338.

Seifert B (2004) The "Black Bog Ant" *Formica picea* Nylander, 1846 – a species different from *Formica candida* Smith, 1878 (Hymenoptera: Formicidae). Myrmecological News 6: 29–38.

Seifert B (2005) Rank elevation in two European ant species: *Myrmcia lobulicornis* Nylander, 1857, stat.n. and *Myrmica spinosior* Santschi, 1931, stat.n. (Hymenoptera: Formicidae). Myrmecological News 7: 1–7.

Seifert B (2006) *Temnothorax saxonicus* (Seifert, 1995) stat.n., comb.n. – a parapatric, closely-related species of *T. sordidulus* (Müller, 1923) comb.n. and description of two new closely-related species, *T. schoedli* sp.n. and *T. artvinense* sp.n., from Turkey (Hymenoptera: Formicidae). Myrmecological News 8: 1–12.

Seifert B (2008) Removal of allometric variance improves species separation in multi-character discriminant functions when species are strongly allometric and exposes diagnostic characters. Myrmecological News 11: 91–105.

Seifert B, Schlick-Steiner B, Steiner F (2009) *Myrmica constricta* Karavaiev, 1934 – a cryptic species of *Myrmica hellenica* Finzi, 1926 (Hymenoptera: Formicidae). Soil Organisms 81 (1): 53–76.

Seifert B, Schultz R (2009) A taxonomic revision of the *Formica rufibarbis* Fabricius, 1973 group (Hymenoptera: Formicidae). Myrmecological News 12: 255–272.

Stankiewicz AM, Antonova V (2005) *Myrmica vandeli* Bondroit (Hymenoptera: Formicidae) - a new ant species to Bulgaria. Acta Zoologica Bulgarica 57 (1): 123–126.

Steiner F, Schlick-Steiner BC, Sanetra M, Ljubomirov T, Antonova V, Christian E, Stauffer C (2005) Towards DNA-aided biogeography: An example from *Tetramorium* ants (Hymenoptera, Formicidae). Annales Zoologici Fennici 42: 23–35.

Taylor RW (1967) A monographic revision of the ant genus *Ponera* Latreille (Hymenoptera: Formicidae). Pacific Insects Monographs 13: 1–112.

Urbanski J (1975) Mrówki żniwiarki (*Messor* For.) gromadzą skorupki ślimaków. Przegląd Zoologiczny 19 (4): 465–467.

Vagalinski B, Lapeva-Gjonova A (in press) The ants (Hymenoptera, Formicidae) of Plana Mountain (Bulgaria). Historia Naturalis Bulgarica.

Vassilev I (1984) [The ants (Formicidae, Hymenoptera) from the valley of Rachene river]. Annuaire de l'Université de Sofia "Kliment Ohridski", Faculte de Biologie 78 (1): 74–80. [in Bulgarian].

Vassilev I, Evtimov M (1973) [The ants (Hymenoptera) from Lozen Mountain]. Annuaire de l'Université de Sofia "Kliment Ohridski", Faculté de Biologie 67 (1): 121–128. [in Bulgarian].

Vatov V, Bobev R (1976) [Distribution of the red wood ants in Bulgaria]. Zashtita na Prirodata 1: 10–11. [in Bulgarian].

Vesselinov G (1981) Diffusione e protezione delle formiche del gruppo *Formica rufa* in Bulgaria. Collana Verde 59: 317–318.

Viehmeyer H (1922) Neue Ameisen. Archiv für Naturgeschichte 88 (A7): 203–220.

Wesselinoff GD (1936) Die Ameise *Ponera coarctata* Latr. in Bulgarien. Bulletin de la Société Entomologique de Bulgarie 9: 131–134.

Wesselinoff GD (1967) Hügelbauende Waldameisen in den Losen, Plana, Werila, Witoscha und Ljulingebirgen. Waldhygiene 7: 106–116.

Wesselinov GD (1968) [The ants from Parangalitsa Reserve]. Priroda i Znanie 6: 20–22. [in Bulgarian].

Wesselinoff GD (1972) Einfluss der Gösswaldschule auf die Ameisenuntersuchungen in Bulgarien. Waldhygiene 9 (5–8): 257–259.

Wesselinoff GD (1973) Die hügelbauenden Waldameisen Bulgariens. Waldhygiene 10: 103–117.

Wesselinov GD (1974) [About some questions on using wood ants in biological control]. Gorsko Stopanstvo 10: 39–42. [in Bulgarian].

Wesselinoff GD (1979) Verbreitung und Schutz der Waldameisen in Bulgarien. Comptes rendus de la reunion des groupes de travail "*Formica rufa*" et "Vertebres predateurs des insectes" de l'oilb (Varenna, Italie, 1978), Bulletin Srop II-3: 495–498.

Wetterer JK, Espadaler X, Wetterer AL, Aguin-Pombp D, Franquinho-Aguiar AM (2007) Ants (Hymenoptera: Formicidae) of the Madeira Archipelago. Sociobiology 49 (3): 265–297.

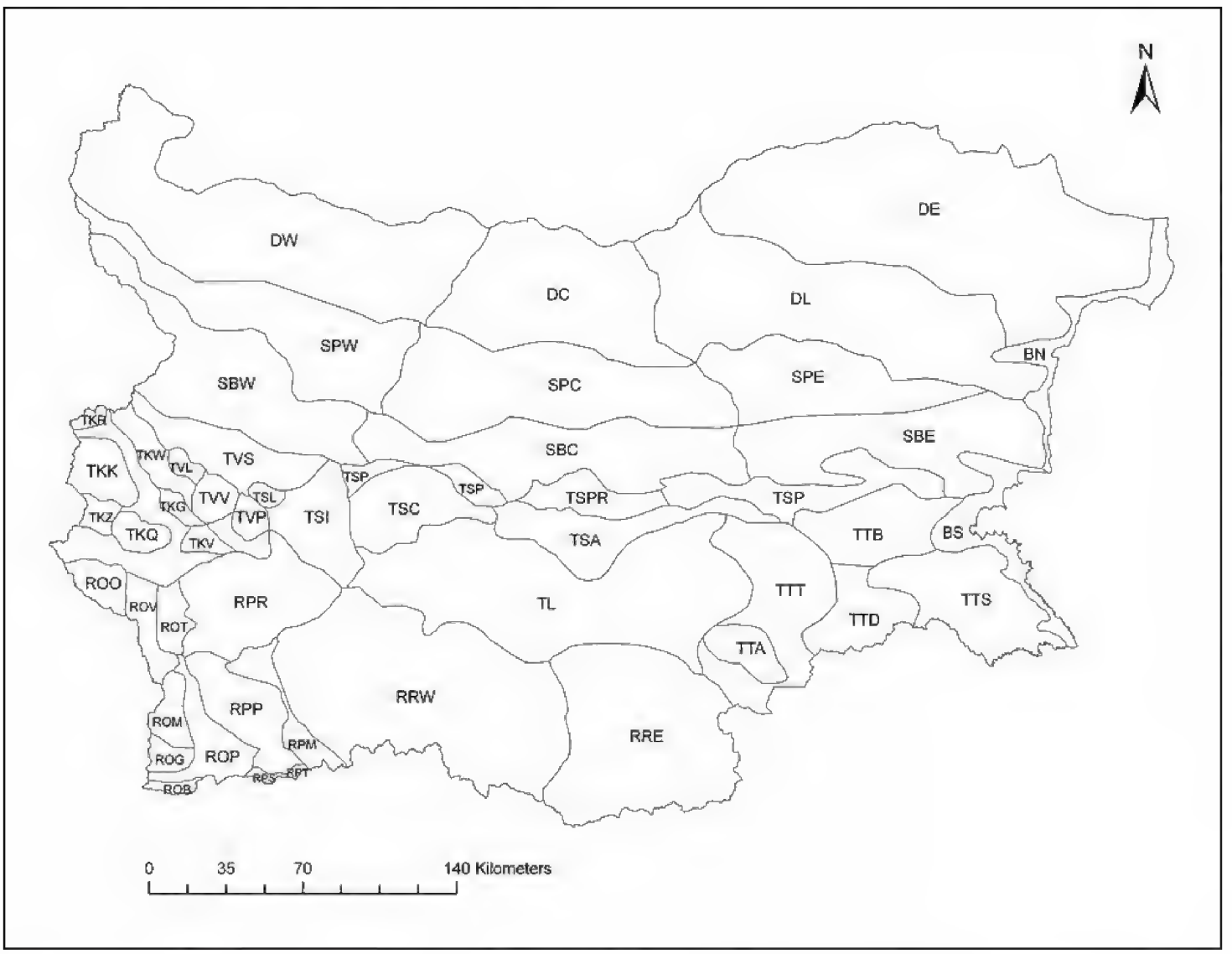
Appendix I: Index

The Index includes names of good species and genera, mentioned in the current Catalogue. The page number in bold refers to the main treatment of the taxon. Page numbers in italics refer to the Maps.

acervorum **20**, *92*, 119
aegaeus **41**, 61, *107*, 122
aenescens **57**, *114*, 123
aethiops **41**, *107*, 122
affinis **21**, *92*, 119
alienus **35**, 36, 41, *103*, 121
Amblyopone **4**, 5, 60, *79*, 117
Anergates **27**, 60, 63, *96*, 120
Aphaenogaster **13**, 60, *85*, *86*, 118
aquilonia **47**, 63, *109*, 123
atanassovii **14**, *86*, 118
atratulus **27**, 63, *96*, 120
auberti **17**, 61, *89*, 119
balcanicus 2, **36**, *103*, 121
barbarus **14**, *86*, 119
baudueri **7**, 60, *81*, 117
bicolor rufiventris **57**, *114*, 123
bicornis **36**, *103*, 121
Bothriomyrmex **33**, 60, 61, *100*, 121
brunneus **36**, *103*, 121
bulgarica 2, **26**, *96*, 120
bulgaricus 2, **21**, *92*, 119
caducus **14**, *87*, 119
caespitum **27**, 28, 30, *97*, 120
Camponotus **41**, 42, 43, 44, 45, 46, 59, 60, 61, *107*, *108*, *109*, 122, 123
capitatus **15**, 61, *87*, 119
Cardiocondyla 2, **26**, 27, 60, 61, *96*, 120
carniolicus **37**, *104*, 121
Cataglyphis **57**, 58, 60, *114*, *115*, 123, 124
Chalepoxenus **26**, 60, 63, *91*, 120
chefketi **28**, *97*, 120
cinerea **47**, 61, *109*, 123
citrinus **37**, *104*, 121
clara **48**, *109*, 123
clypeatus **21**, *93*, 119
coarctata **5**, 6, *80*, 117
communistus **33**, *100*, 121
concolor **15**, 60, *87*, 119
constricta **7**, 60, *82*, 117
corticalis **21**, *93*, 119
crassispinus **22**, 23, 61, *93*, 119
Crematogaster **17**, 18, 60, 61, *89*, 119
Cryptopone **5**, 60, *79*, 117
cunicularia **48**, *110*, 123
dalmaticus **42**, *107*, 122
debile **12**, *85*, 118
denticulata **4**, *79*, 117
diomedeum **29**, 61, *97*, 121
distinguendus **37**, 60, *104*, 121
Dolichoderus **31**, 60, *99*, 121
eduardi **5**, *80*, 117
elegans 2, **26**, *96*, 120
emarginatus **37**, *104*, 121
epirotes **13**, *85*, 118
erraticum **32**, *100*, 121
exsecta **48**, *110*, 123
fallax **43**, *107*, 122
ferox **29**, *97*, 121
flavus **38**, 39, 60, *104*, 121
Formica **47**, 48, 49, 50, 51, 52, 53, 54, 55, 60, 61, 63, *109*, *110*, *111*, *112*, *113*, 123
Formicoxenus **19**, 60, 63, *91*, 119
frauenfeldi **34**, *102*, 121
fugax **19**, *90*, 119
fuliginosus **38**, *105*, 121
fusca **49**, *110*, 123
gagates **49**, *110*, 123
gallienii **8**, *82*, 117
gestroi **43**, 61, *107*, 122
gibbosa **13**, *85*, 118
gibbus **33**, *100*, 121
glauca **50**, *110*, 123
gordiagini **26**, 61, 63, *91*, 120
graecus 1, 3, **22**, 61, *93*, 119
graminicola **17**, *89*, 119
Harpagoxenus **20**, 60, 61, 63, *91*, 119
hellenica **8**, *82*, 117
herculeanus **43**, *107*, 122
humile **33**, *101*, 121
hungaricum **29**, 30, *98*, 121
Hypoponera **5**, 60, *80*, 117
impressifrons **5**, *79*, 117
interruptus **22**, *93*, 119
ionius **44**, *108*, 122
jensi **39**, *105*, 121
kobachidzei **56**, *113*, 123
korbi (*Proformica*) **56**, *113*, 123
korbi (*Temnothorax*) 1, 3, **22**, 61, *94*, 119
kratochvili **30**, 63, *98*, 121
Lasius 2, **35**, 36, 37, 38, 39, 40, 41, 60, 61, 121, *103*, *104*, *105*, *106*, 122
lateralis **44**, *108*, 123
lemani **50**, *111*, 123
Lepisiota **34**, 35, 60, 61, *102*, 121
Leptothorax 2, **20**, 60, *92*, 119
ligniperdus **44**, *108*, 123

Linepithema **33**, 60, *101*, 121
Liometopum **31**, 60, *99*, 121
lividus **58**, *115*, 124
lobicornis **8**, *82*, 117
lonae **8**, 9, 60, *82*, 117
lugubris **50**, 63, *111*, 123
madeirense **32**, 33, 60, *100*, 121
Manica **7**, 60, *81*, 117
melanocephalus **23**, *94*, 119
melinum **6**, *81*, 117
menozzii **33**, 61, *100*, 121
meridionalis (*Bothriomyrmex*) **33**, *100*, 121
meridionalis (*Lasius*) **39**, 61, 121
Messor **14**, 15, 59, 60, 61, *86*, *87*, *88*, 118, 119
microcephalum **31**, *99*, 121
mixtus **39**, *105*, 122
Monomorium **19**, 60, *90*, 119
moravicum 29, **30**, 61, *98*, 121
muellerianus **26**, 63, *91*, 120
muscorum **20**, *92*, 119
myops **39**, 60, *105*, 122
Myrmecina **17**, 60, *89*, 119
Myrmica **7**, 8, 9, 10, 11, 12, 60, 61, 70, *82*, *83*, *84*, 117, 118
Myrmoxenus **26**, 60, 61, 63, *91*, 120
nadigi **23**, 67, *94*, 119
nasuta **56**, 60, *113*, 123
neglectus **39**, 61, *105*, 122
niger **39**, 40, 41, *105*, 122
nigra **27**, 60, 61, 120
nigriceps **23**, 60, 61, 119
nitens **35**, *102*, 121
nitidigaster 2, **40**, *106*, 122
nitidulus **19**, 63, *91*, 119
nodus 57, **58**, 59, *115*, 124
numidicum **6**, 60, 61, 117
nylanderi 22, **23**, *94*, 119
ochracea **5**, *79*, 117
oertzeni **15**, *87*, 119
pallida **13**, *86*, 118
pallidula **16**, *88*, 119
paralienus 36, **40**, 61, *106*, 122
parvulus **23**, *94*, 119
pharaonis **19**, 65, *90*, 119
Pheidole **16**, 60, *88*, 119
picea **51**, *111*, 123
piceus **45**, *108*, 123
pilosiscapus **56**, *114*, 123
Plagiolepis **34**, 60, *101*, 121
platythorax 40, **41**, 61, *106*, 122
polyctena **51**, 63, *111*, 123
Polyergus **59**, 60, *115*, 124
Ponera **5**, 6, 60, *80*, 117
pratensis **52**, 63, *112*, 123
Prenolepis **35**, 60, *102*, 121
pressilabris **53**, *112*, 123
Proceratium **6**, 60, 61, *81*, 117
Proformica **56**, 60, *113*, *114*, 123
psammophilus 36, **41**, 61, *106*, 122
punctatissima **5**, *80*, 117
pygmaea **34**, *101*, 121
Pyramica **7**, 60, *81*, 117
quadripunctatus **31**, *99*, 121
ravouxi **26**, 61, 63, *91*, 120
recedens 20, **24**, 63, *94*, 119
rubida **7**, *81*, 117
rubra **9**, *82*, 118
rufa **53**, 63, *112*, 123
rufescens **59**, *115*, 124
rufibarbis **54**, *113*, 123
ruginodis **9**, *83*, 118
rugulosa **9**, *83*, 118
sabuleti 9, **10**, *83*, 118
samius **46**, *108*, 123
sanguinea **55**, *113*, 123
saxonicus **24**, 61, *95*, 120
scabrinodis **10**, *83*, 118
schencki **10**, *84*, 118
schmidti **18**, *89*, 119
scutellaris **18**, 60, 119
semiruber **24**, *95*, 120
slovaca **11**, *84*, 118
Solenopsis **19**, 60, *90*, 119
sordidula **18**, *89*, 119
sordidulus 24, **25**, 61, *95*, 120
specioides **11**, *84*, 118
splendens **35**, 60, 61, 121
stambuloffii 2, **27**, *96*, 120
Stenamma **12**, 60, *85*, 118
striaticeps **56**, 60, *114*, 123
Strongylognathus **30**, 31, 60, 63, *98*, 121
structor **15**, *88*, 119
sublaevis **20**, 61, 63, *91*, 119
subterranea **13**, *86*, 118
sulcinodis **12**, *84*, 118
sylvaticus **46**, *108*, 123
Tapinoma **32**, 60, *100*, 121
taurica **34**, *101*, 121
tauricus **25**, 61, *95*, 120
Temnothorax 1, 2, 3, **20**, 21, 22, 23, 24, 25, 59, 60, 61, 63, *92*, *93*, *94*, *95*, 119, 120
testacea **6**, 60, *80*, 117
testaceus **31**, *98*, 121
Tetramorium **27**, 28, 29, 30, 59, 60, 61, *97*, *98*, 120, 121
truncatus **46**, *109*, 123
truncorum **55**, *113*, 123
tuberum 23, **25**, *95*, 120
umbratus **41**, *106*, 122
unifasciatus **25**, *95*, 120
vagus **46**, *109*, 123
vandeli **12**, 61, *84*, 118

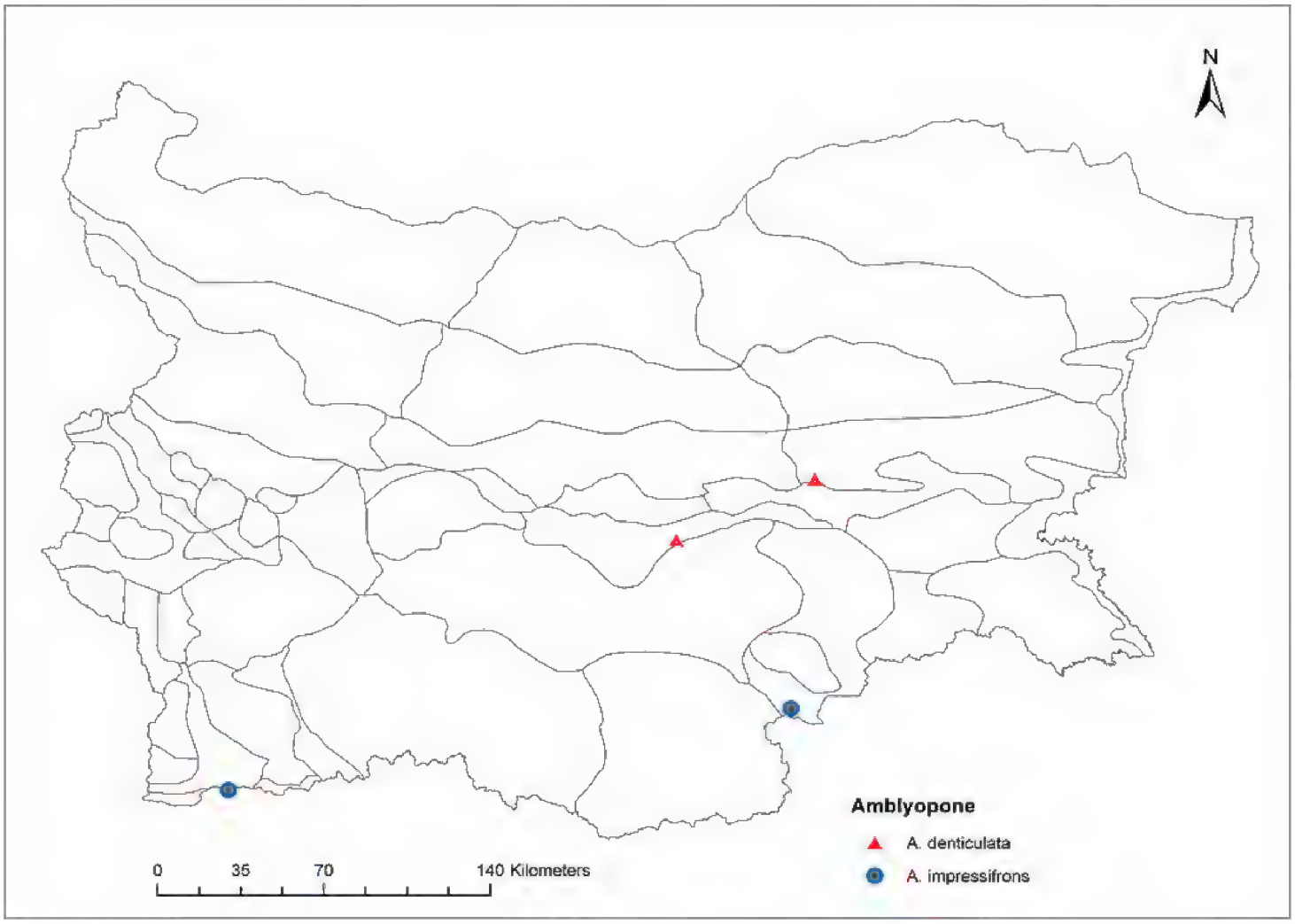
Appendix II: Distribution Maps



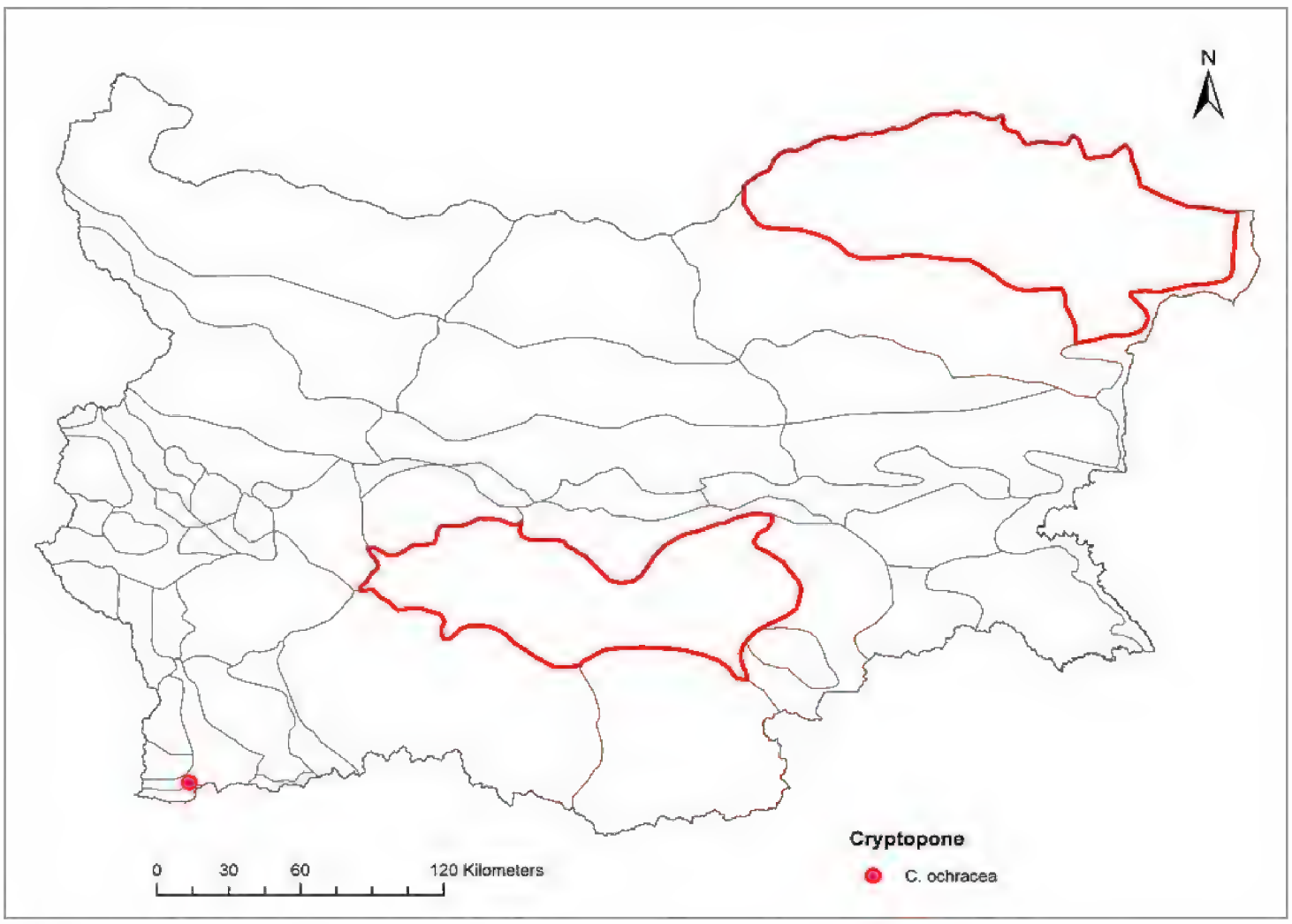
Map 1. Geographical regions of Bulgaria [after Hubenov (1997) with minor changes and additions]

Name of Region	Abbreviations
Danube Plain	D
Western	DW
Central	DC
Eastern	DE
Ludogorie – Dobrudzha district	DL
Stara Planina Range system	S
Predbalkan	SP
Western	SPW
Central	SPC
Eastern	SPE
Stara Planina Mts (Balkans)	SB
Western	SBW
Central	SBC
Eastern	SBE
Transitional region	T
Kraishte-Konyavo district	TK
Ruy Mt.	TKR
Golo Bardo Mt.	TKG

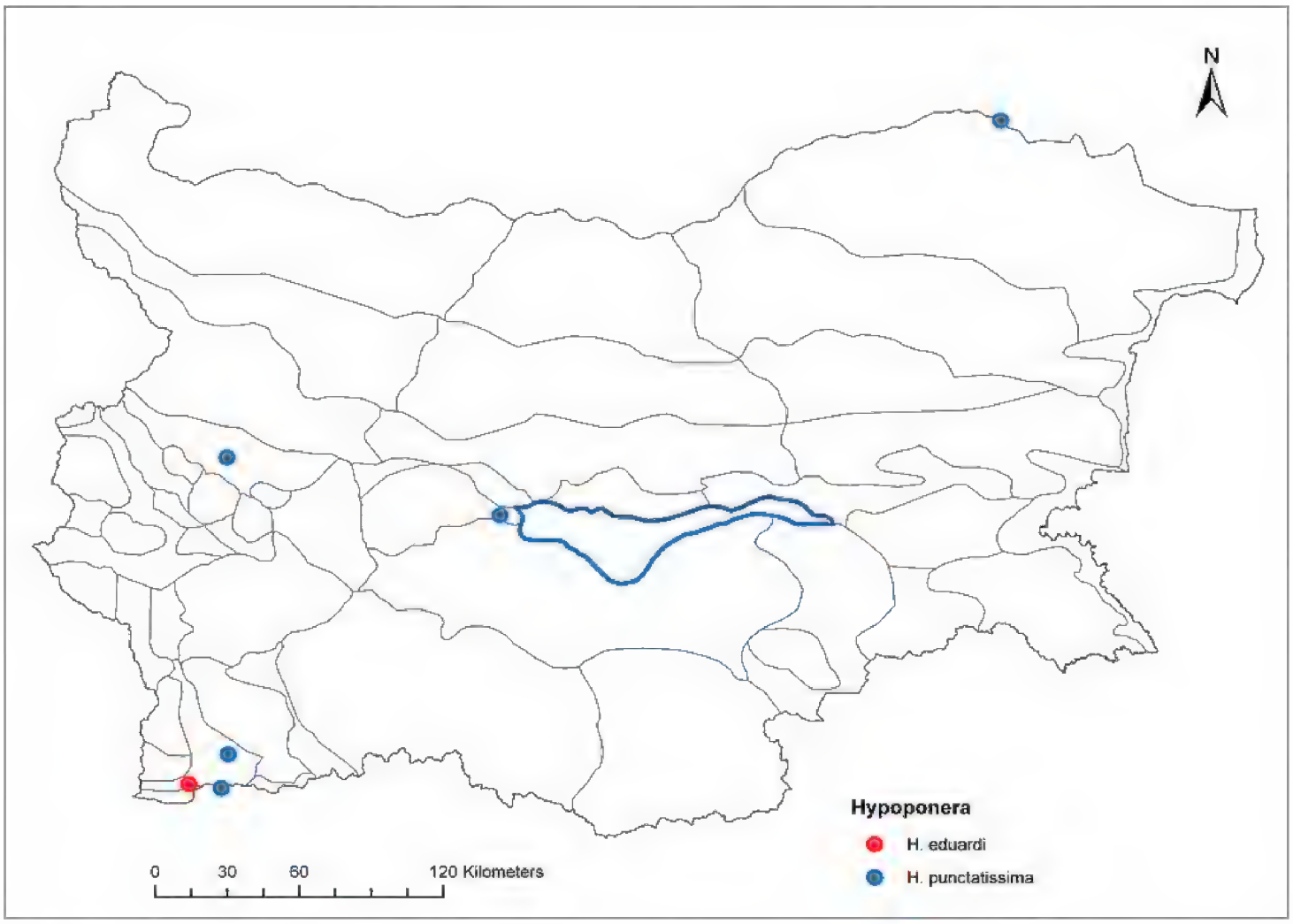
Name of Region	Abbreviations
Verila Mt.	TKV
Kraishte	TKK
Zemenska Planina Mt.	TKZ
Konyavska Planina Mt.	TKQ
Viskyar Mt.	TKW
Vitosha district	TV
Sofia Basin	TVS
Lyulin Mt.	TVL
Vitosha Mt.	TVV
Plana Mt.	TVP
Srednogorie-Podbalkan subregion	TS
Podbalkan Basins	TSP
Rose valley	TSPR
Sredna Gora Mts	TSS
Ihtimanska Mt.	TSI
Lozenska Planina Mt.	TSL
Sushtinska	TSC
Surnena	TSA
Thracian Lowland subregion	TL
Tundzha-Strandzha subregion	TT
Sakar-Tundzha district	TTT
Sakar Mt.	TTA
Bakadzik-Burgas district	TTB
Strandzha-Dervent district	TTD
Strandzha Mt.	TTS
Rila-Rhodopi Massif	R
Osogovo-Belasitsa group	RO
Osogovska Planina Mt.	ROO
Vlahina Planina Mt.	ROV
Maleshevska Planina Mt.	ROM
Ograzhden Mt.	ROG
Belasitsa Mt.	ROB
Srednostrumska valley	ROS
Boboshevo-Simitli valley	ROT
Krupnik-Petrich valley	ROP
Rila-Pirin group	RP
Rila Mt.	RPR
Pirin Mt.	RPP
Slavianka Mt.	RPS
Sturgach Mt.	RPT
Mesta valley	RPM
Rhodopi Mts	RR
Western	RRW
Eastern	RRE
Black Sea coast	B
Northern	BN
Southern	BS


N
Amblyopone
A. denticulata
A. impressifrons
0
35
70
140 Kilometers

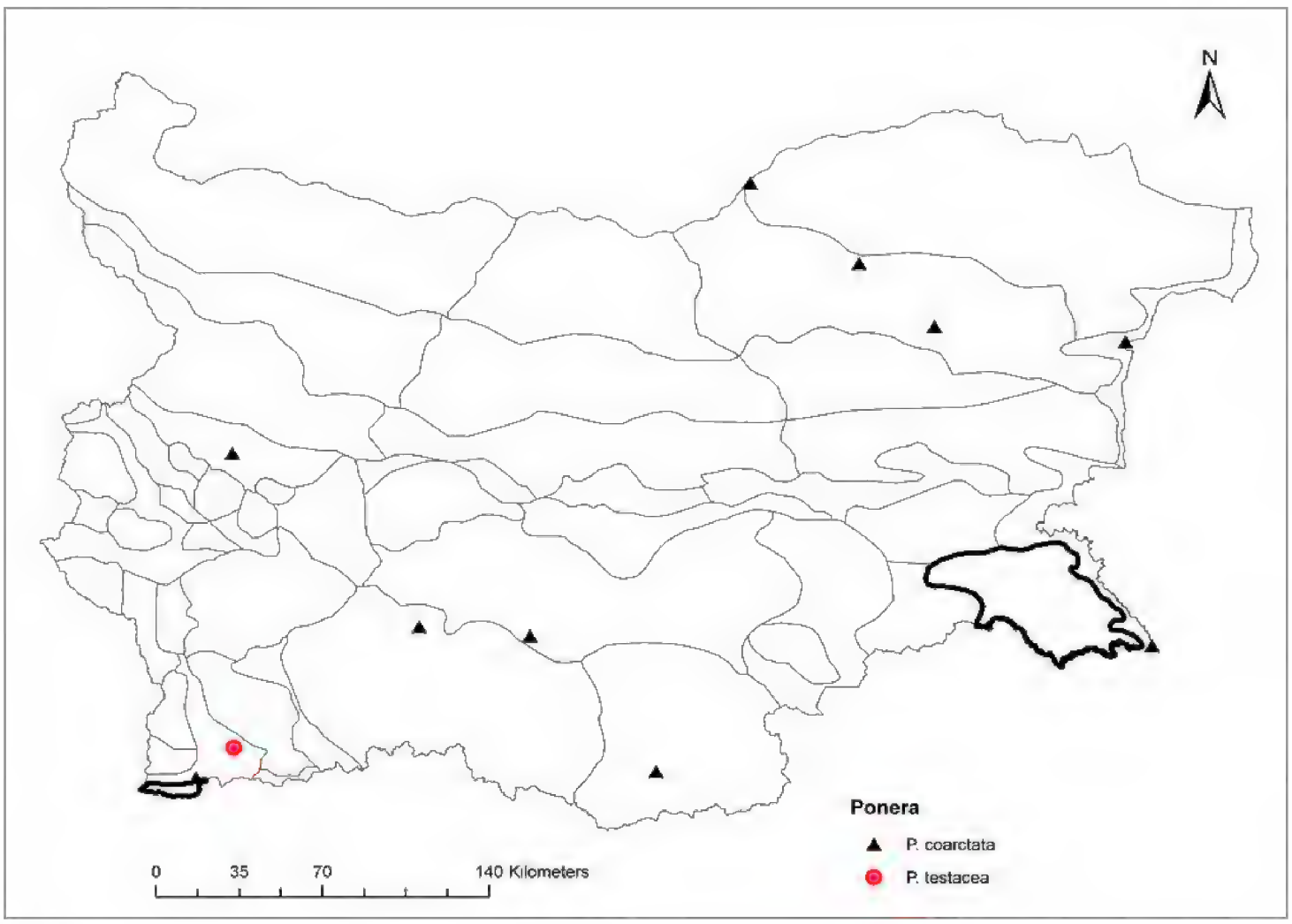
Map 2.


N
Cryptopone
C. ochracea
0
30
60
120 Kilometers

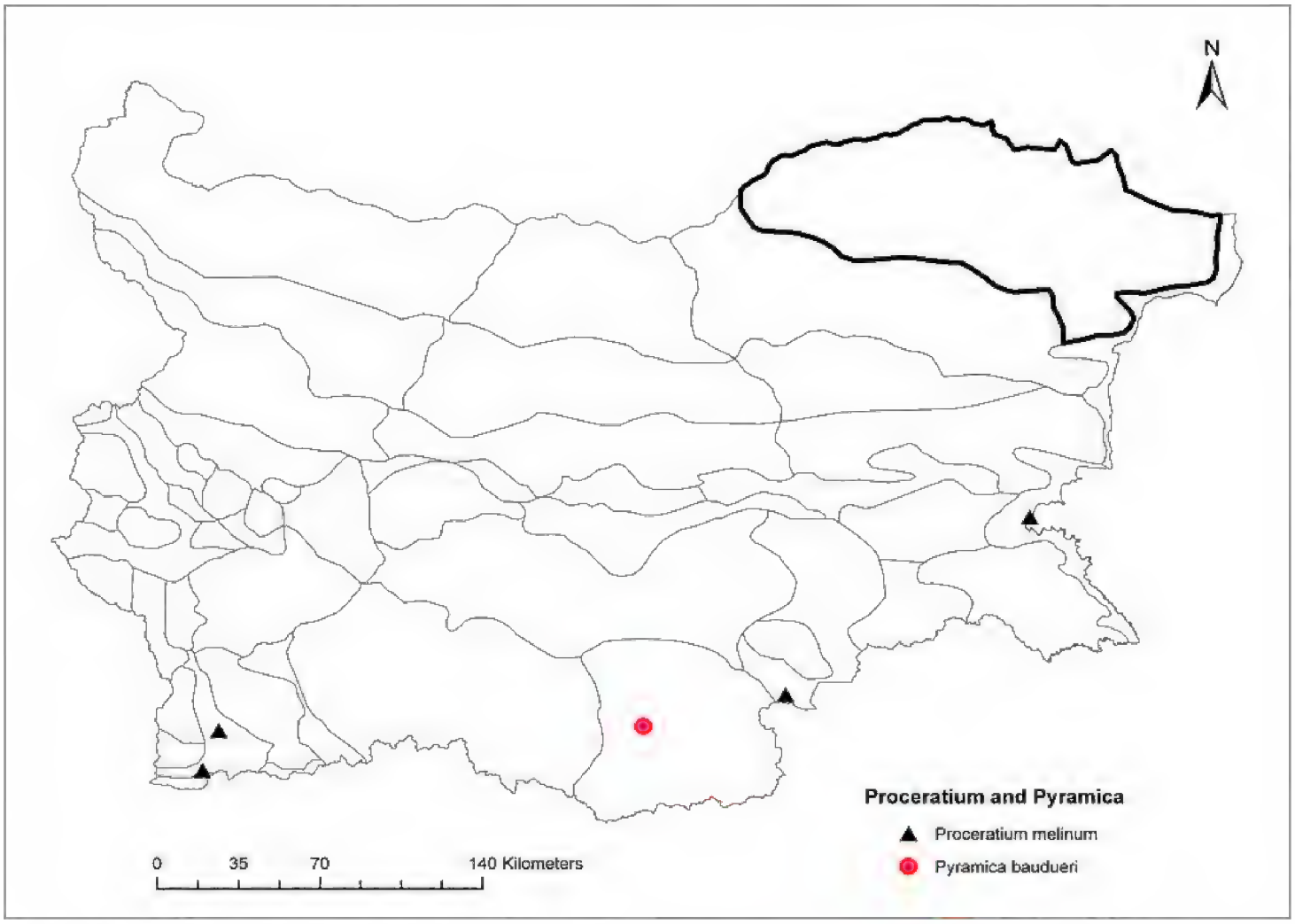
Map 3.


N
Hypoponera
H. eduardi
H. punctatissima
0
30
60
120 Kilometers

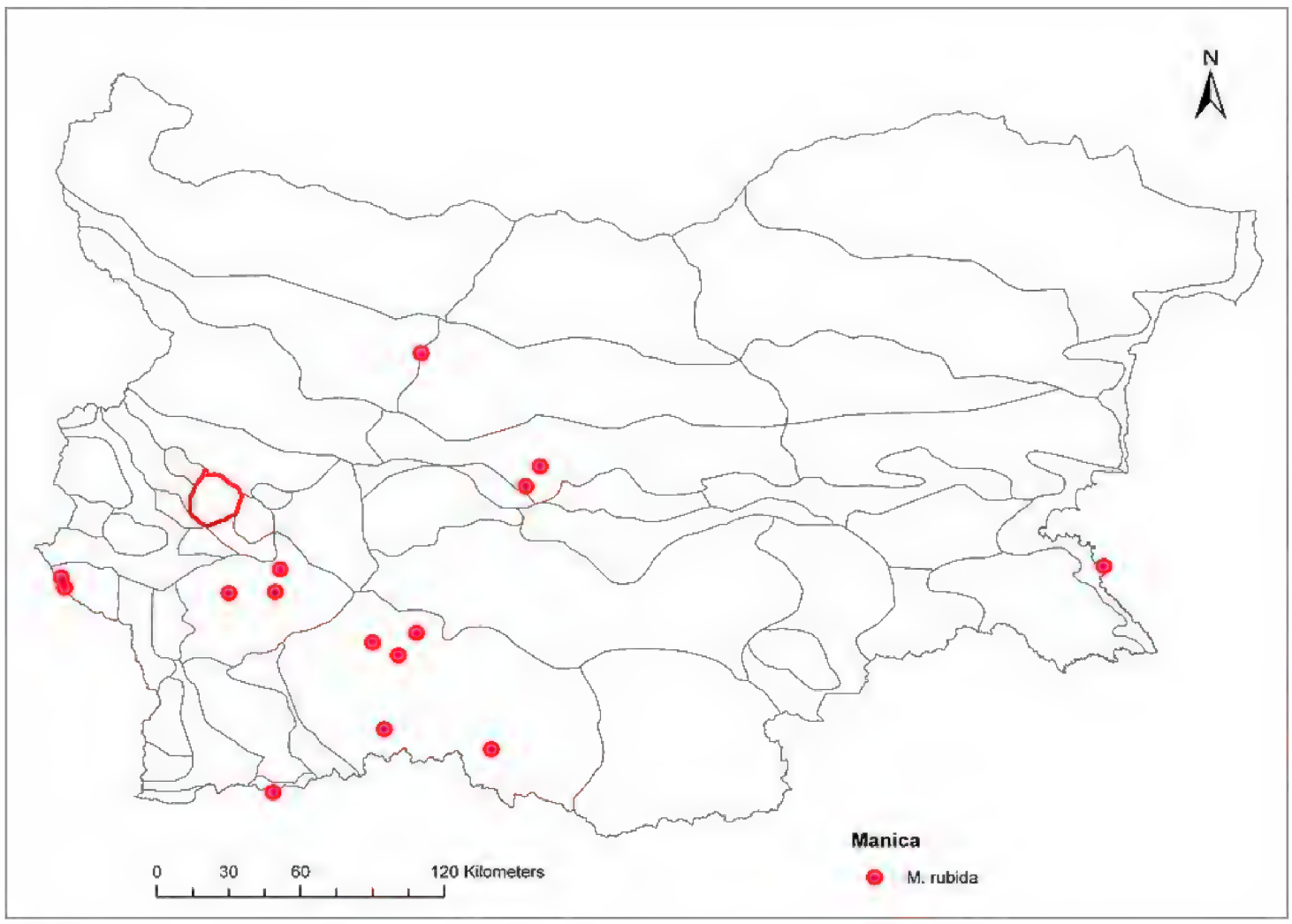
Map 4.


N
Ponera
P. coarctata
P. testacea
0
35
70
140 Kilometers

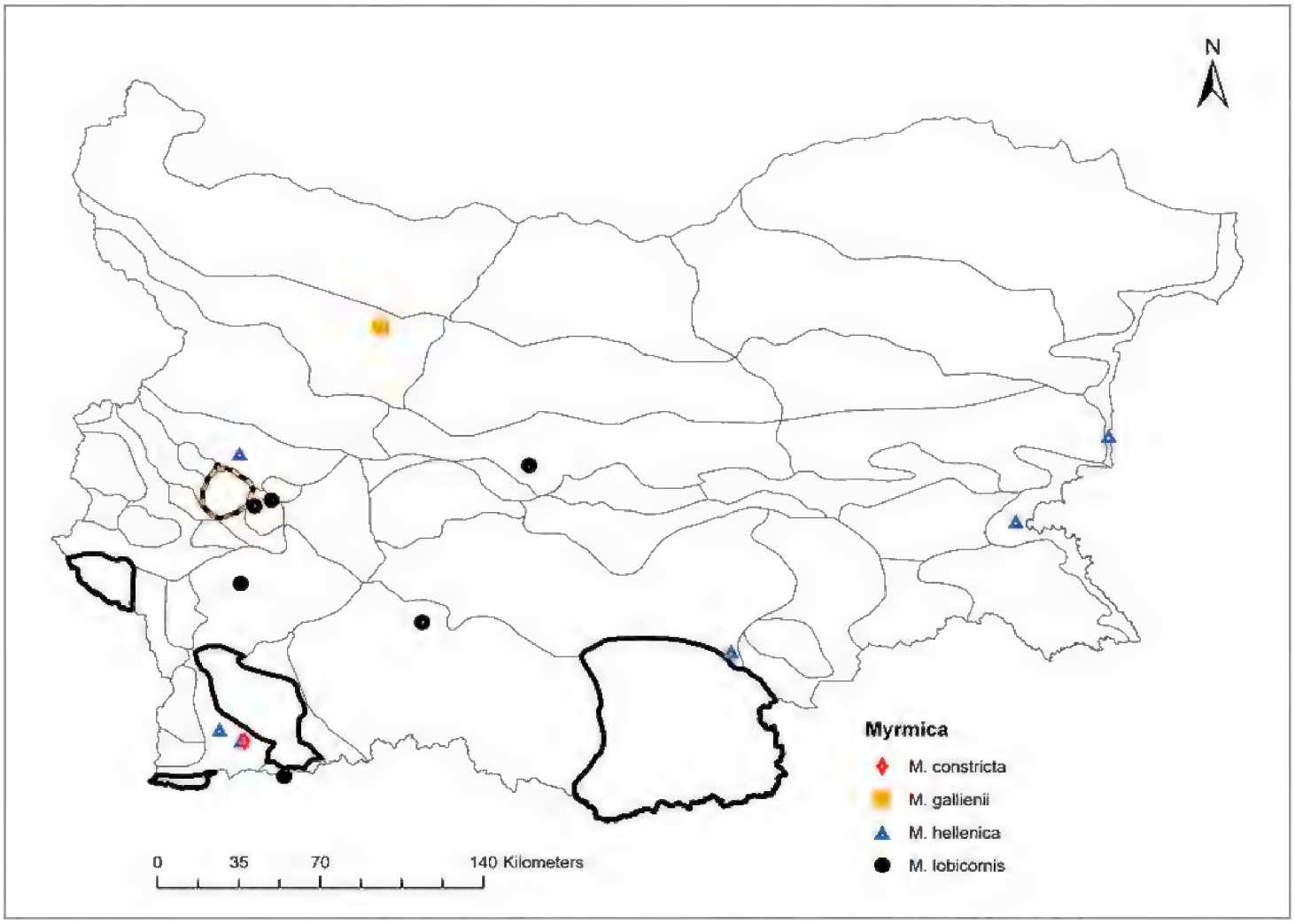
Map 5.


N
Proceratium and Pyramica
Proceratium melinum
Pyramica baudueri
0
35
70
140 Kilometers

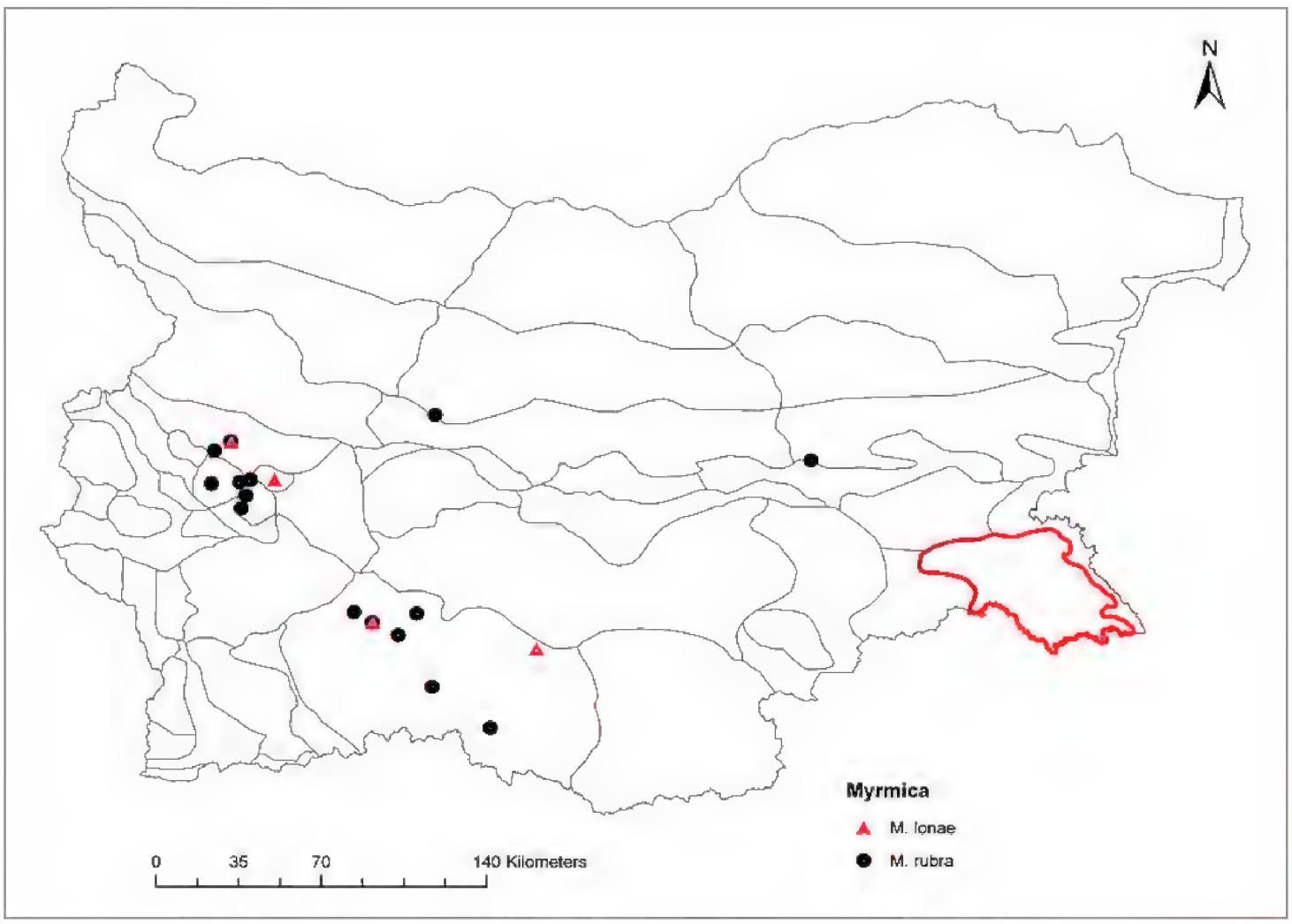
Map 6.


N
Manica
M. rubida
0
30
60
120 Kilometers

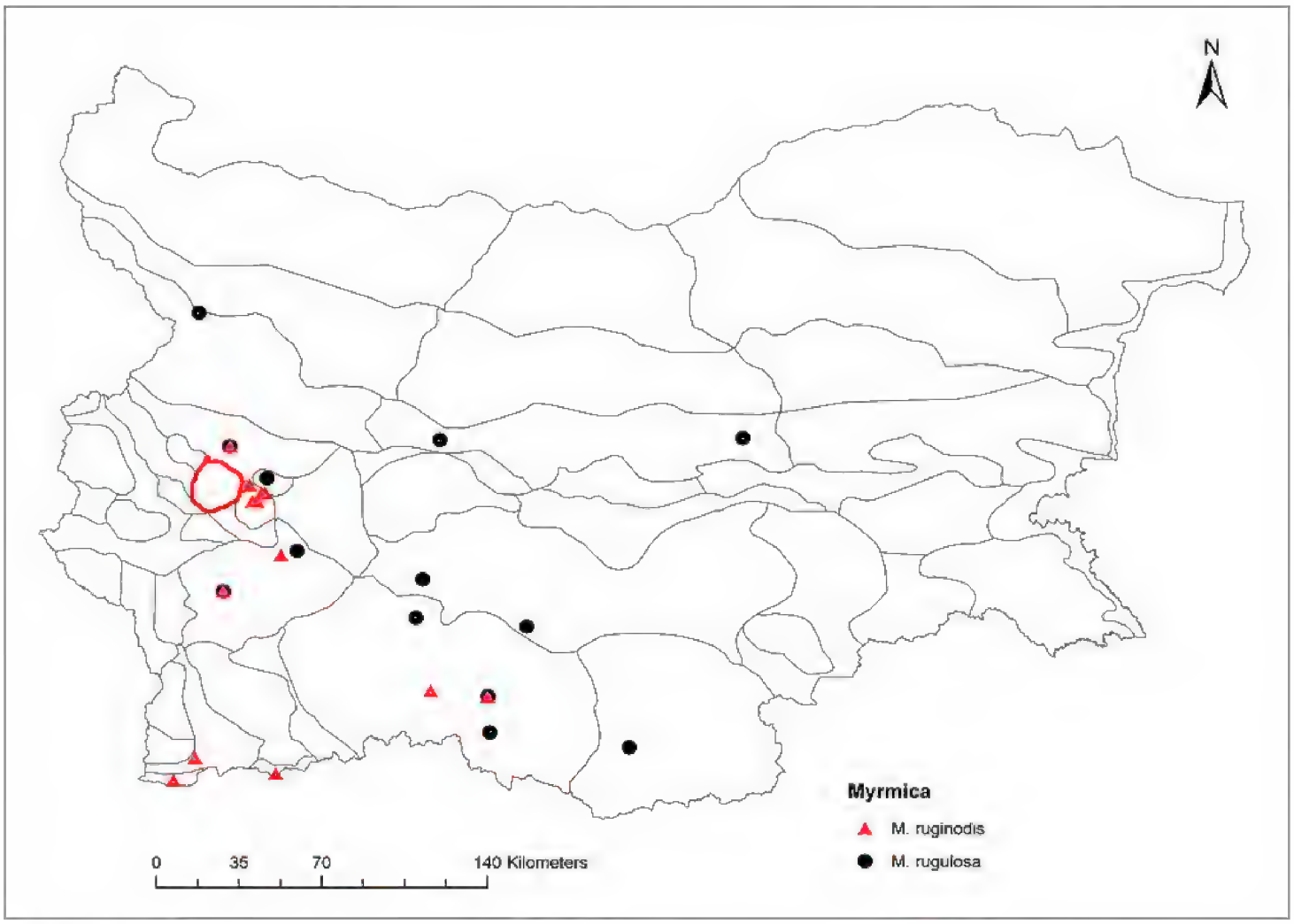
Map 7.


N
Myrmica
M. constricta
M. gallienii
M. hellenica
M. lobicornis
0
35
70
140 Kilometers

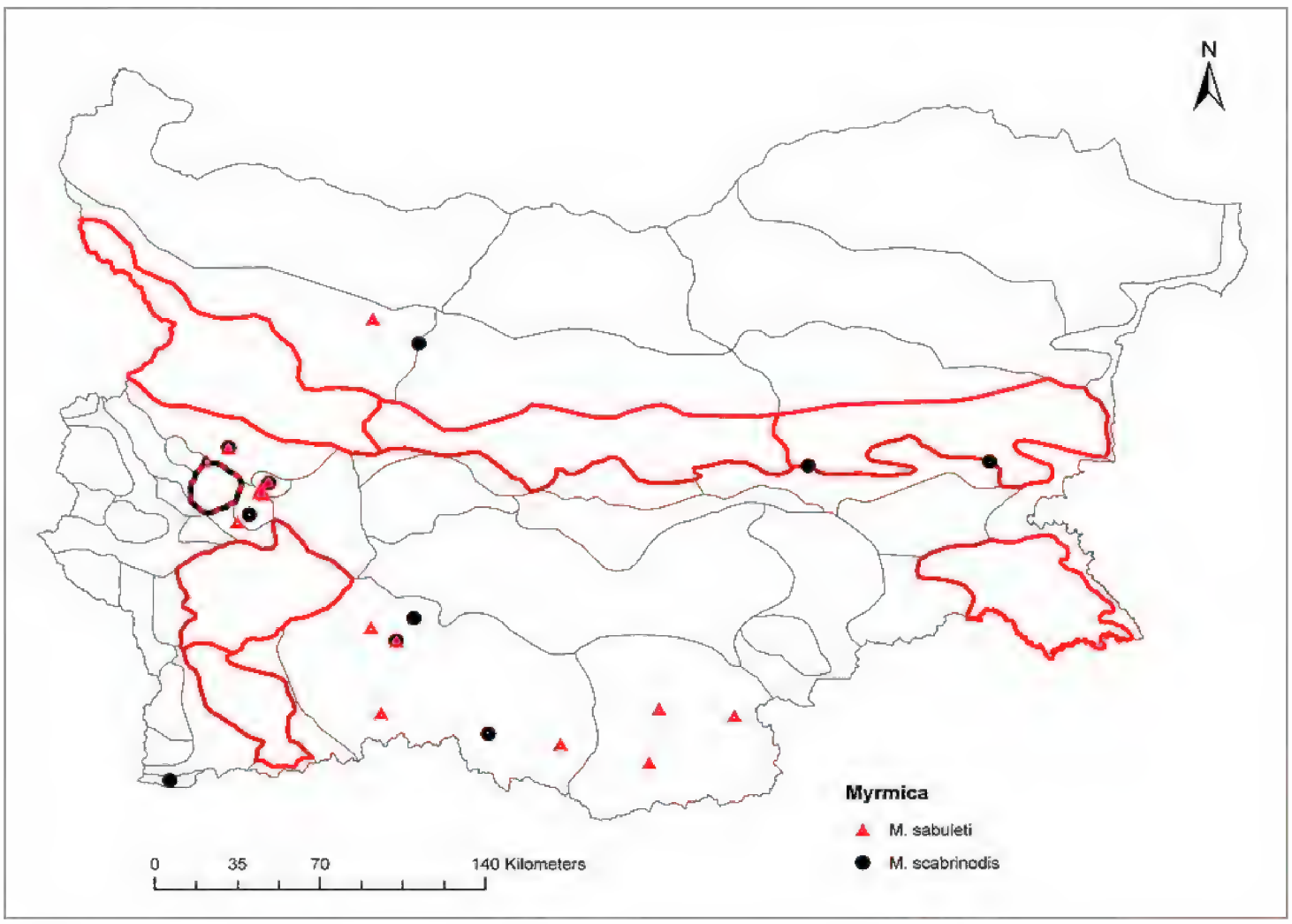
Map 8.


N
Myrmica
M. lonae
M. rubra
0
35
70
140 Kilometers

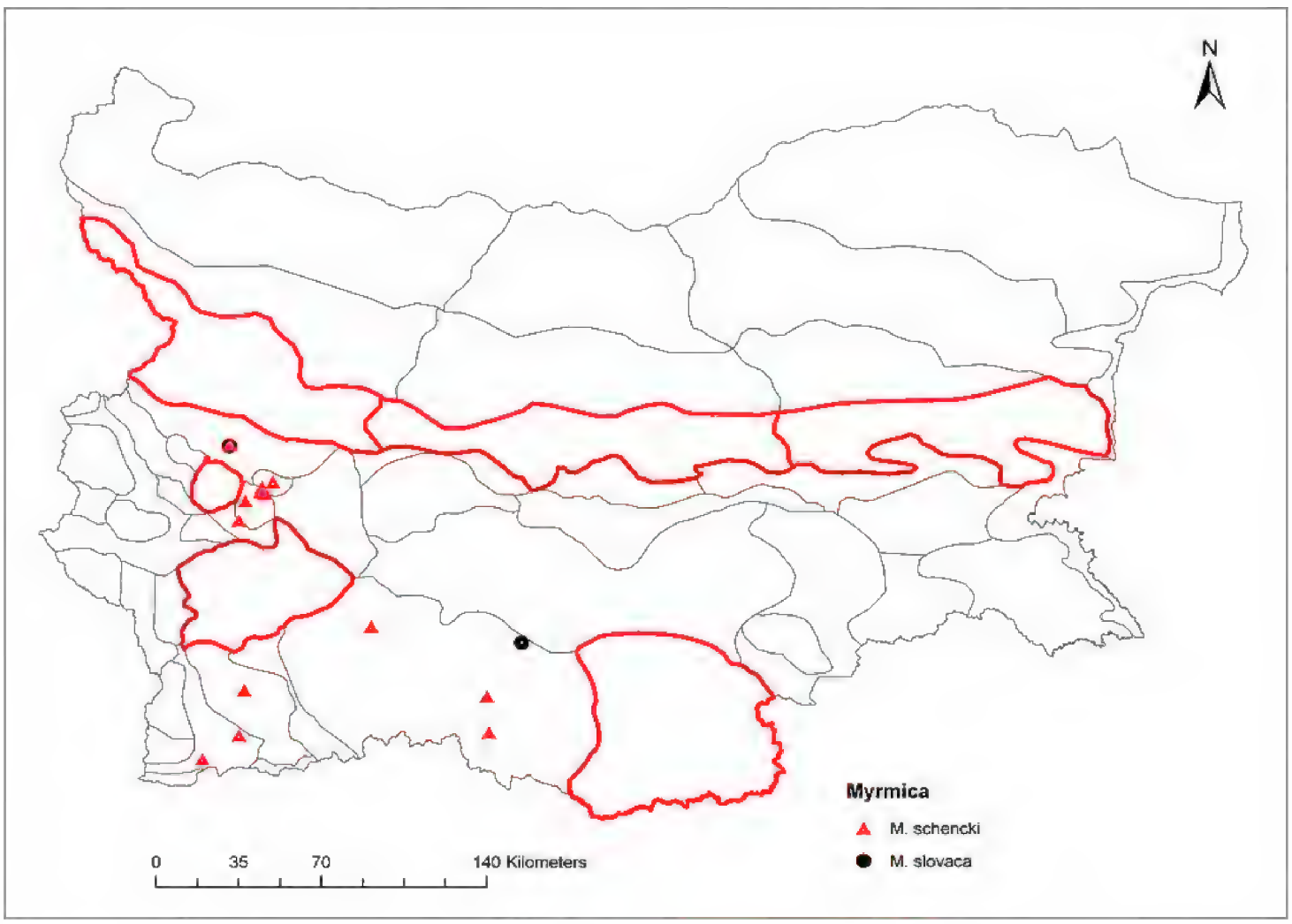
Map 9.


N
Myrmica
M. ruginodis
M. rugulosa
0
35
70
140 Kilometers

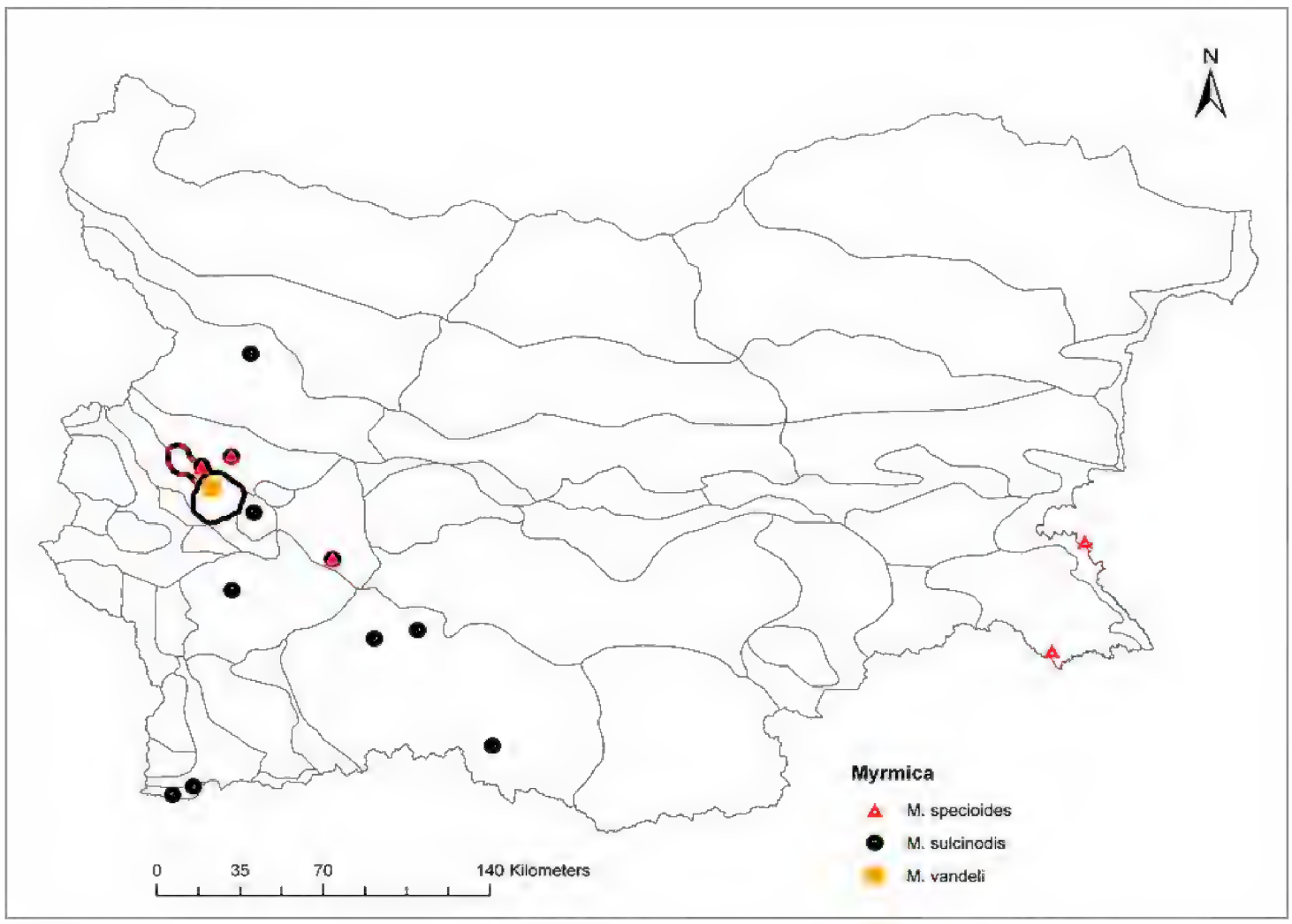
Map 10.


N
Myrmica
M. sabuleti
M. scabrinodis
0
35
70
140 Kilometers

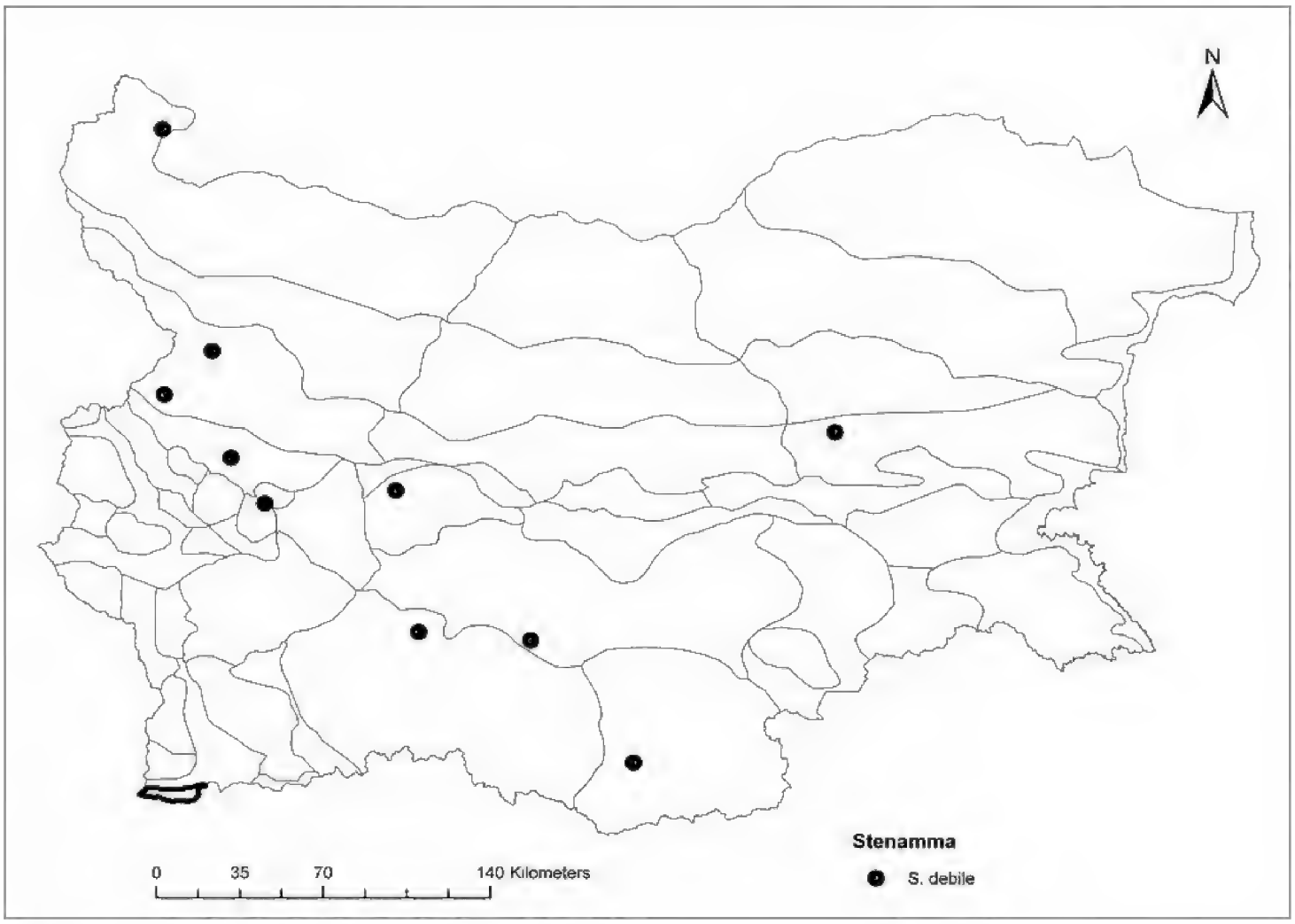
Map 11.


N
Myrmica
M. schencki
M. slovaca
0
35
70
140 Kilometers

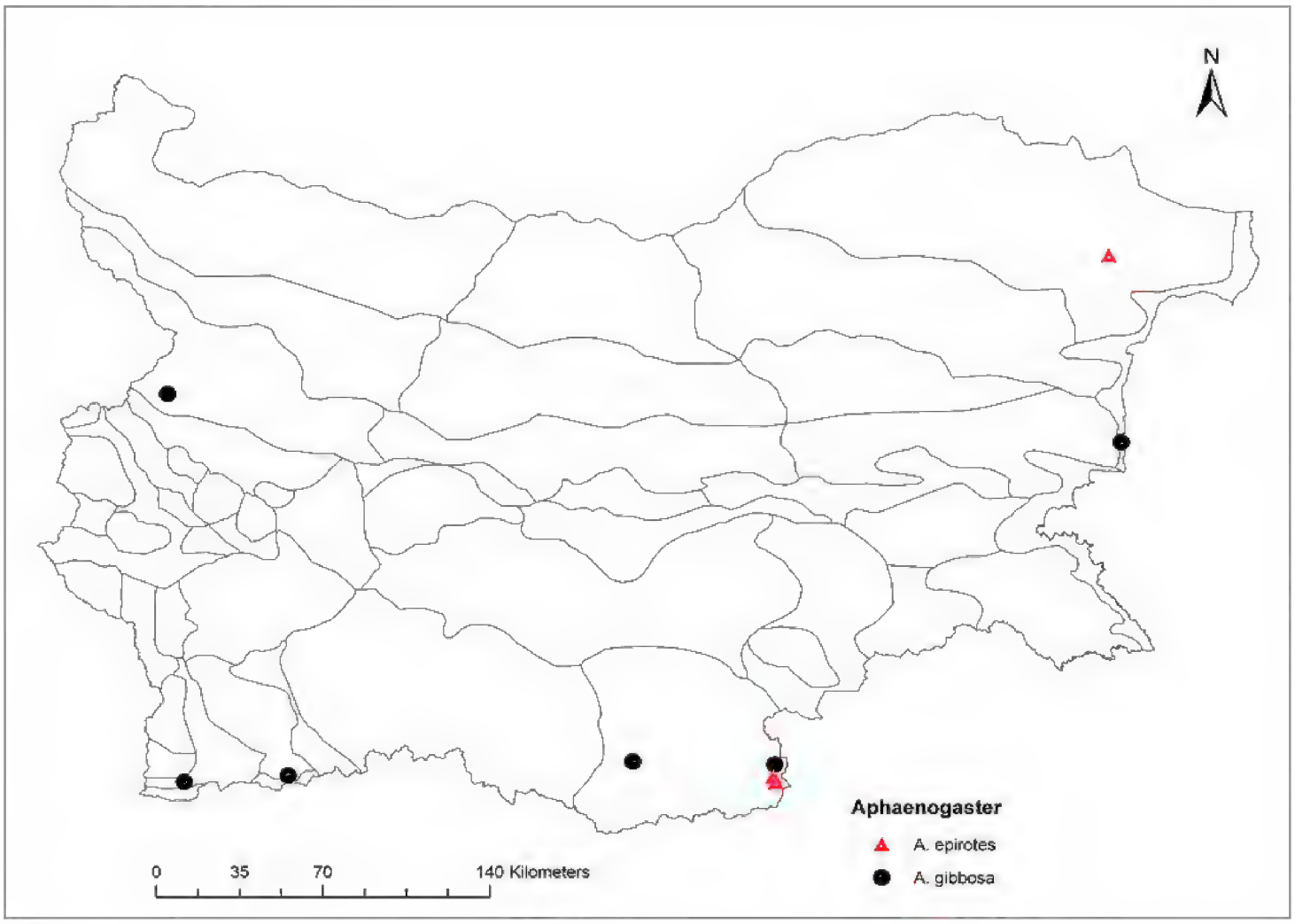
Map 12.


N
Myrmica
M. specioides
M. sulcinodis
M. vandeli
0
35
70
140 Kilometers

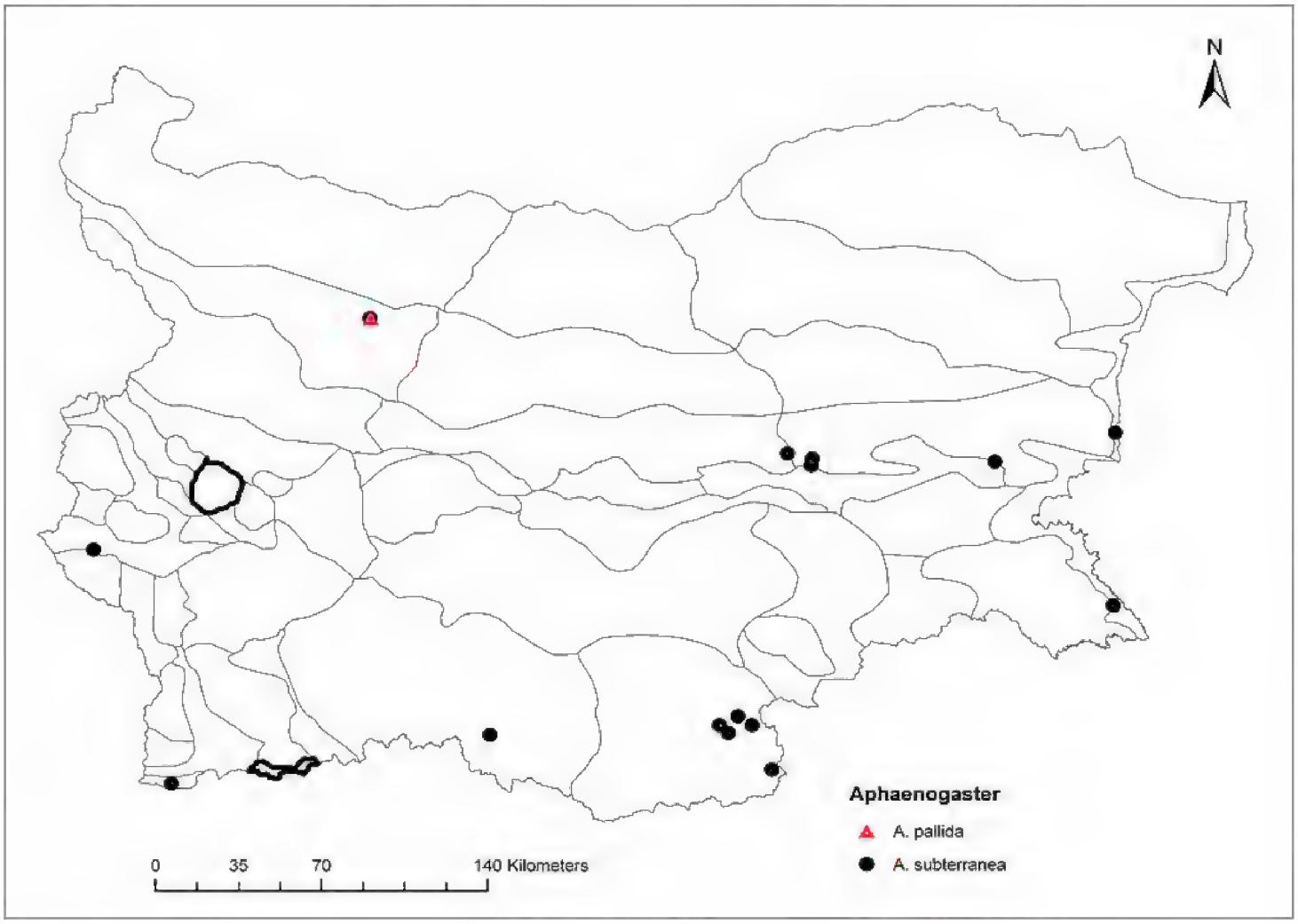
Map 13.


N
Stenamma
S. debile
0
35
70
140 Kilometers

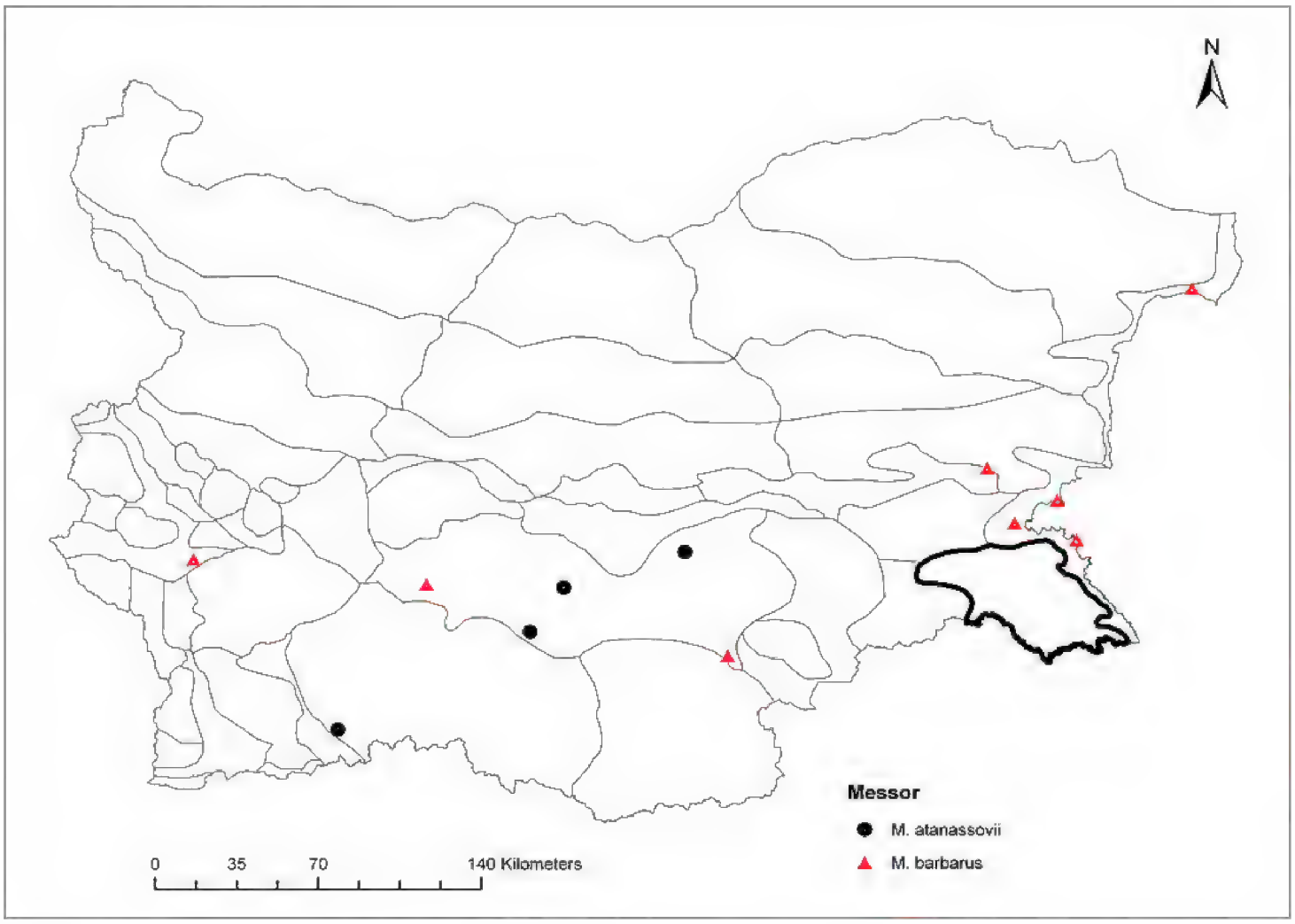
Map 14.


N
Aphaenogaster
A. epirotes
A. gibbosa
0
35
70
140 Kilometers

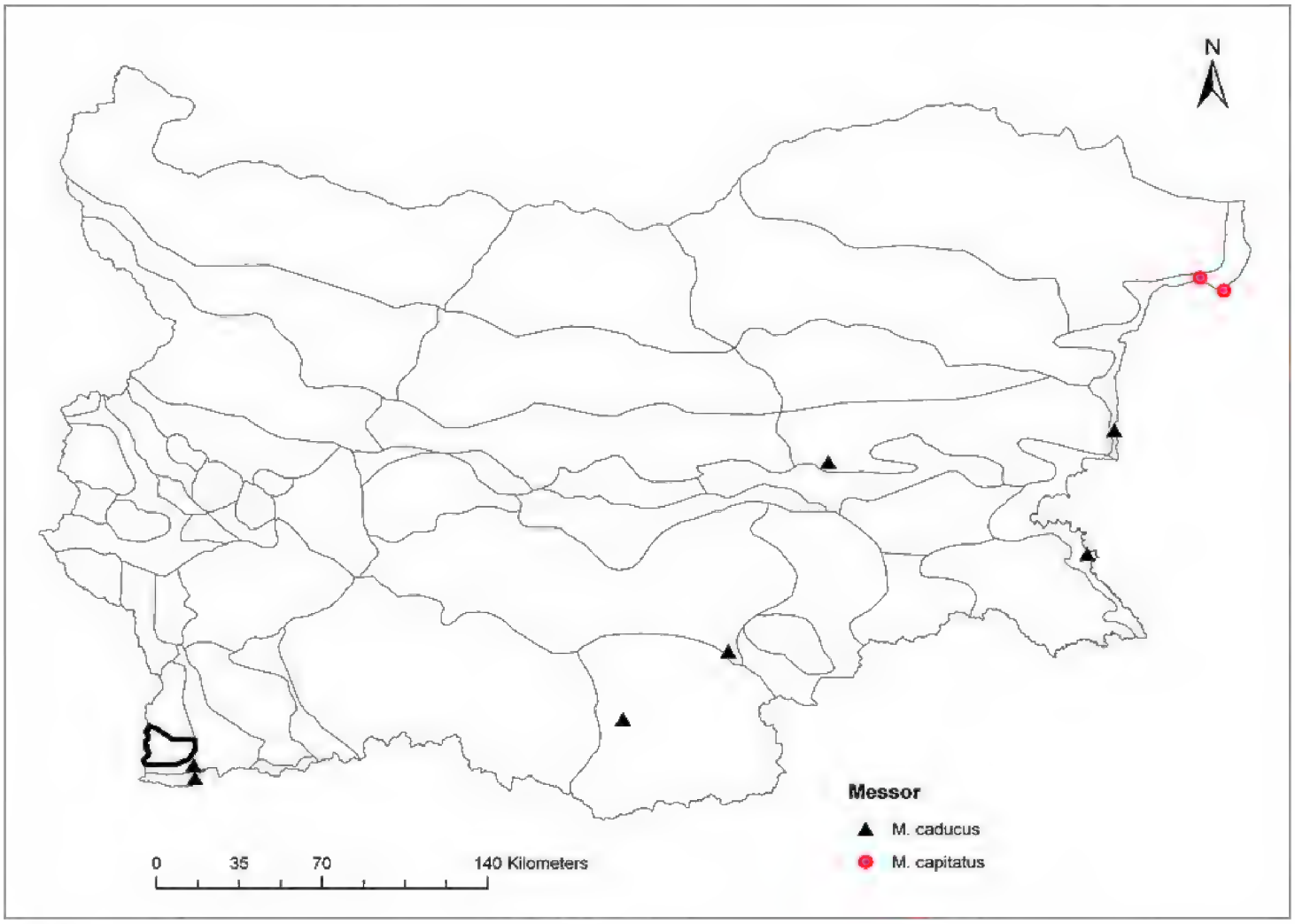
Map 15.


N
Aphaenogaster
A. pallida
A. subterranea
0
35
70
140 Kilometers

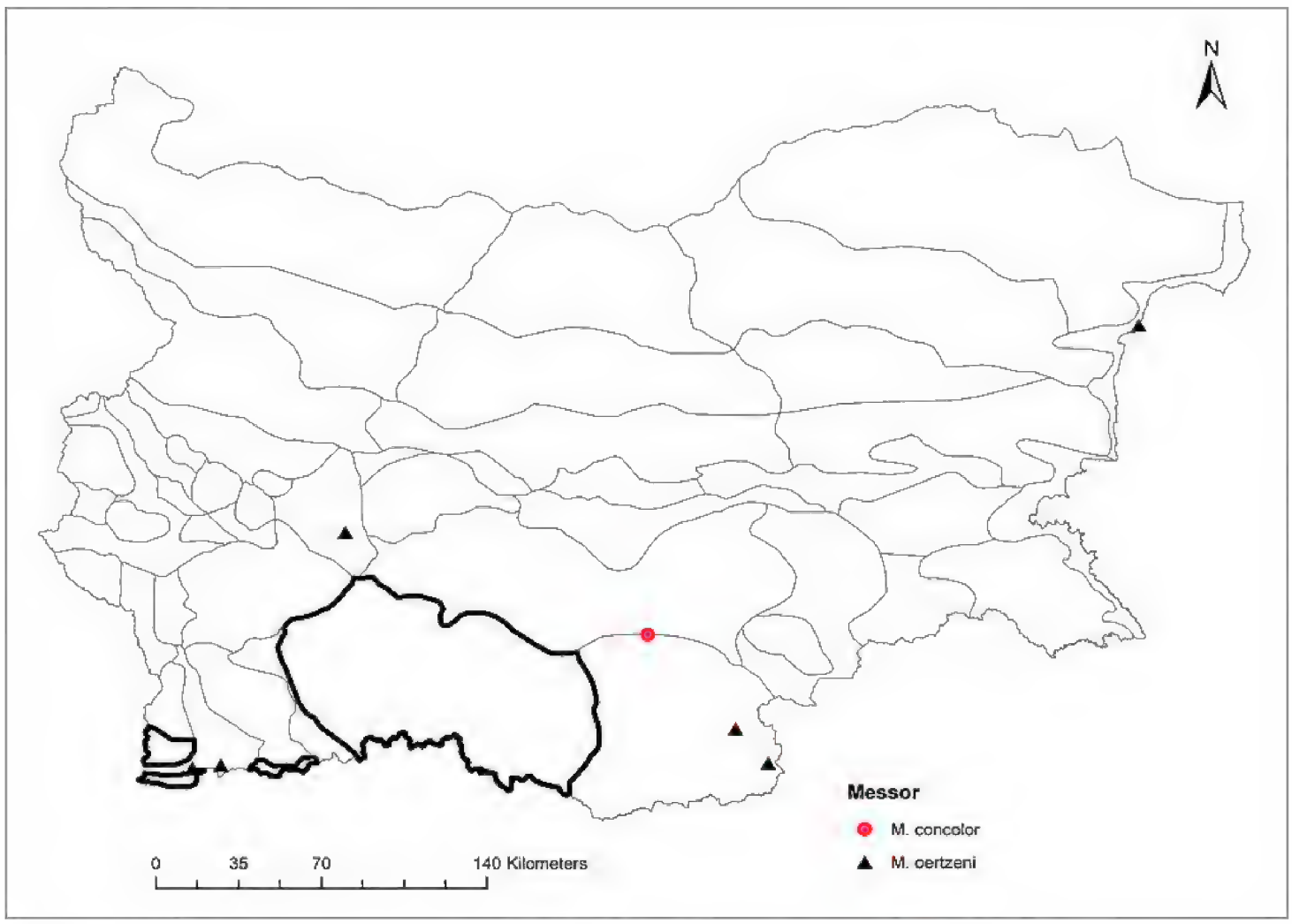
Map 16.


N
Messor
M. atanassovii
M. barbarus
0
35
70
140 Kilometers

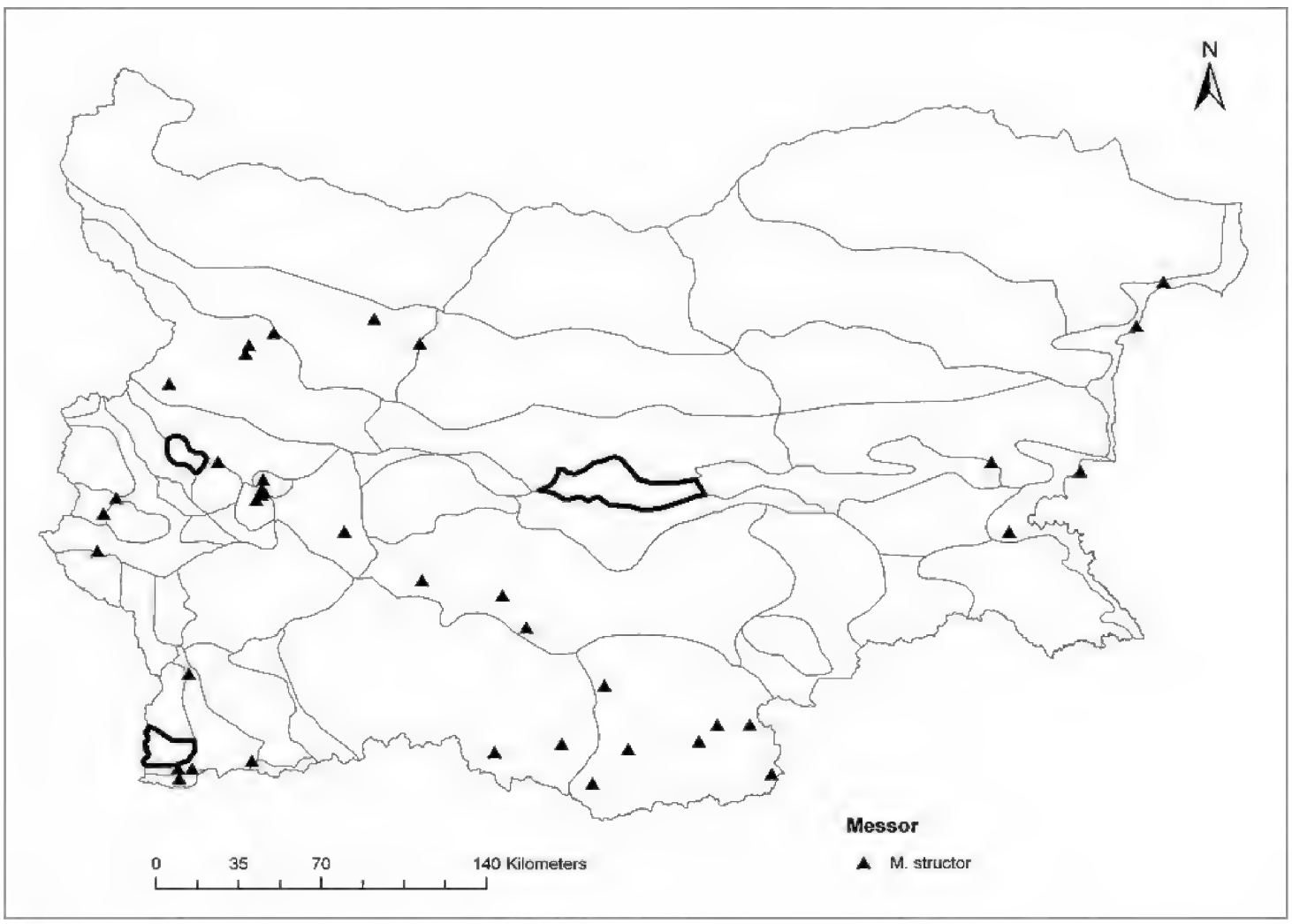
Map 17.


N
Messor
M. caducus
M. capitatus
0
35
70
140 Kilometers

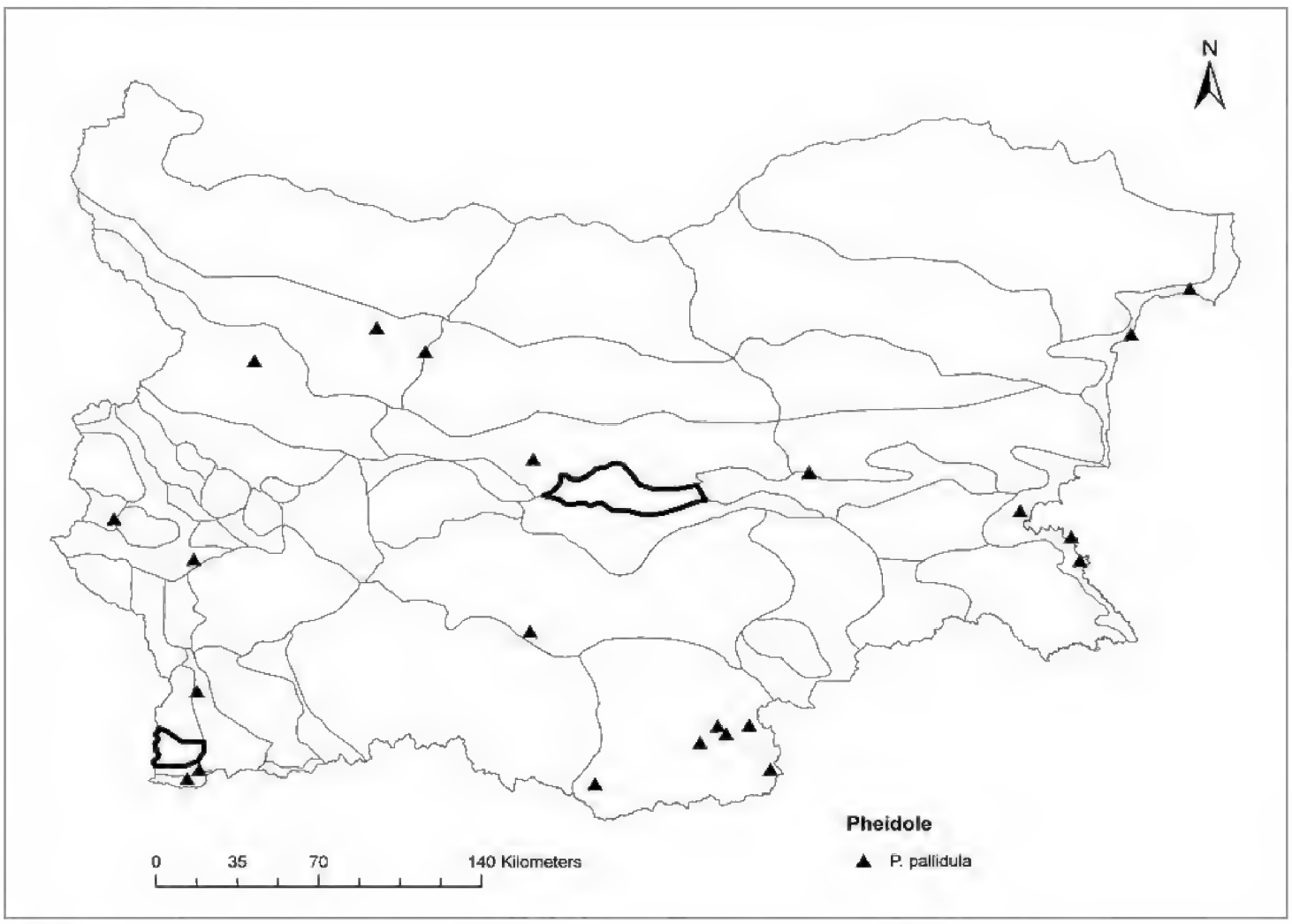
Map 18.


N
Messor
M. concolor
M. oertzeni
0
35
70
140 Kilometers

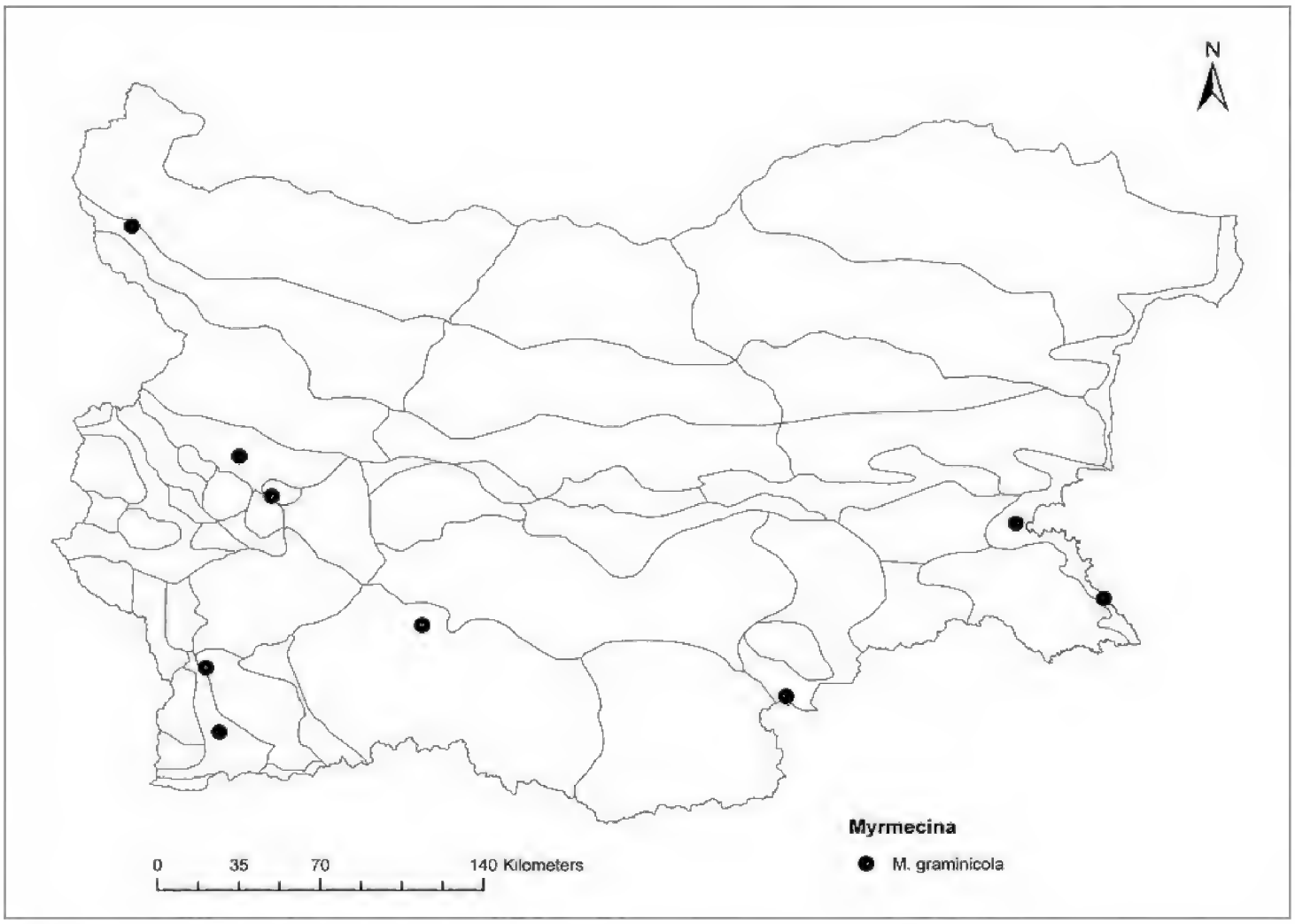
Map 19.


N
Messor
M. structor
0
35
70
140 Kilometers

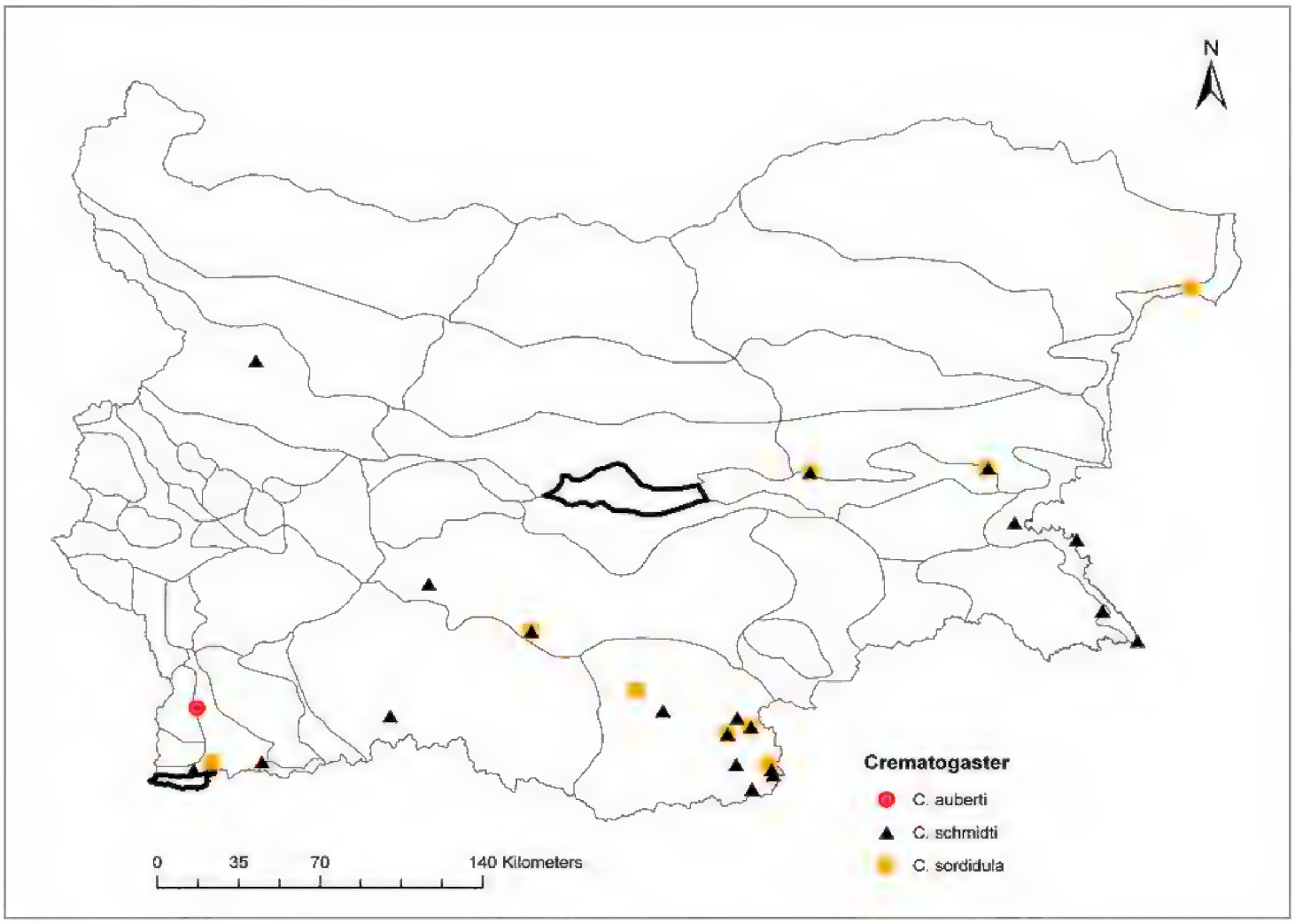
Map 20.


N
Pheidole
P. pallidula
0
35
70
140 Kilometers

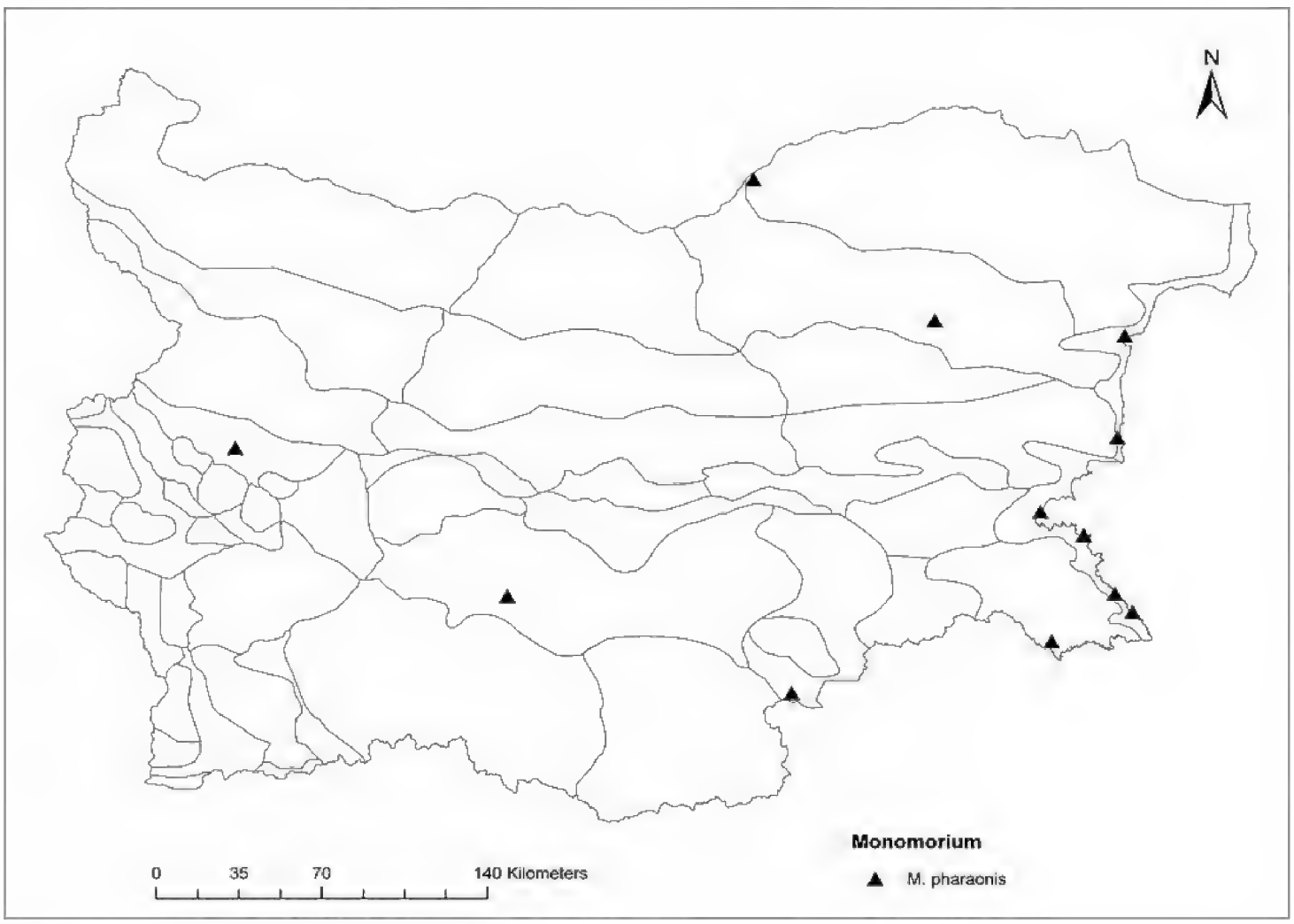
Map 21.


N
Myrmecina
M. graminicola
0
35
70
140 Kilometers

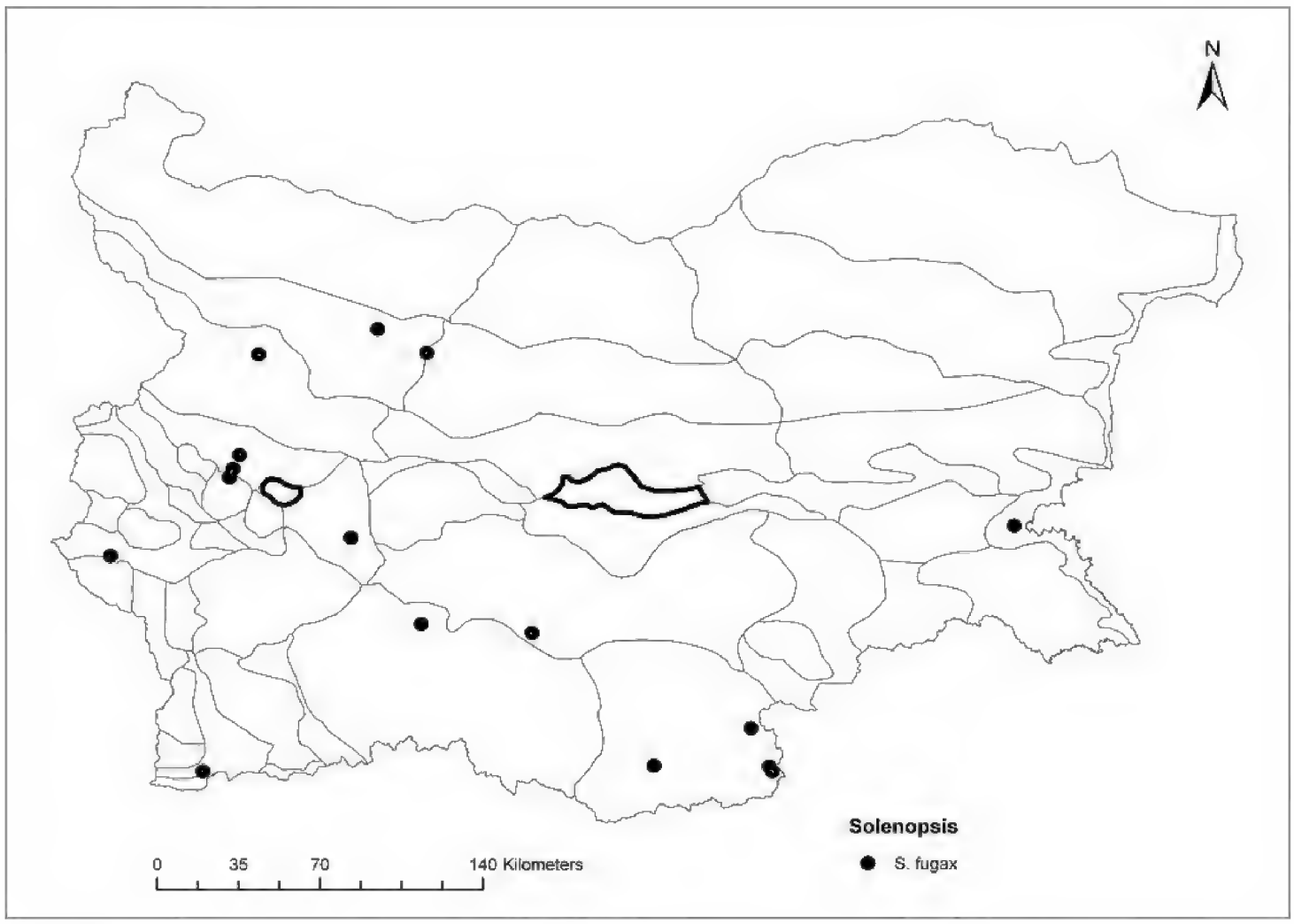
Map 22.


N
Crematogaster
C. auberti
C. schmidti
C. sordidula
0
35
70
140 Kilometers

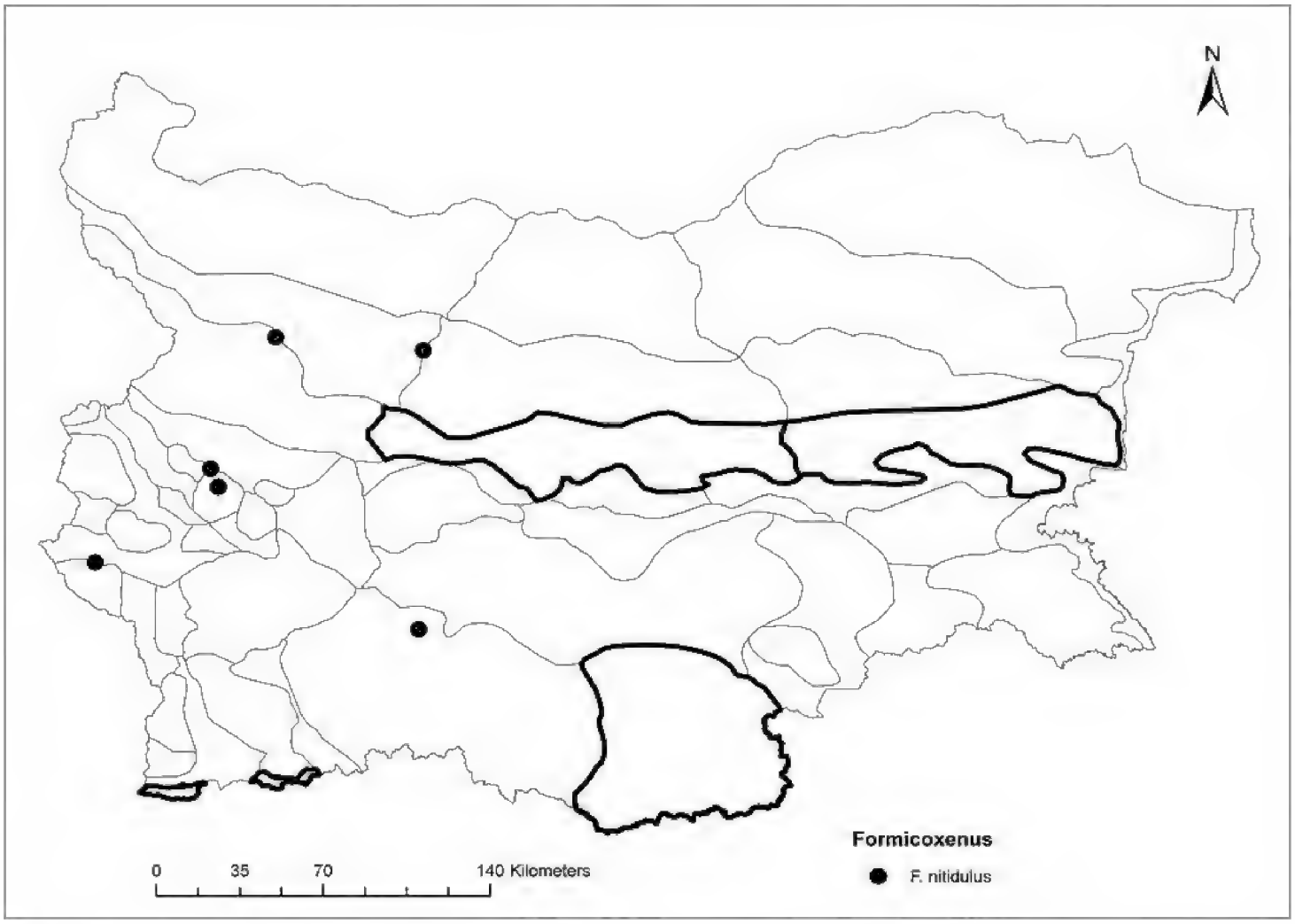
Map 23.


N
Monomorium
M. pharaonis
0
35
70
140 Kilometers

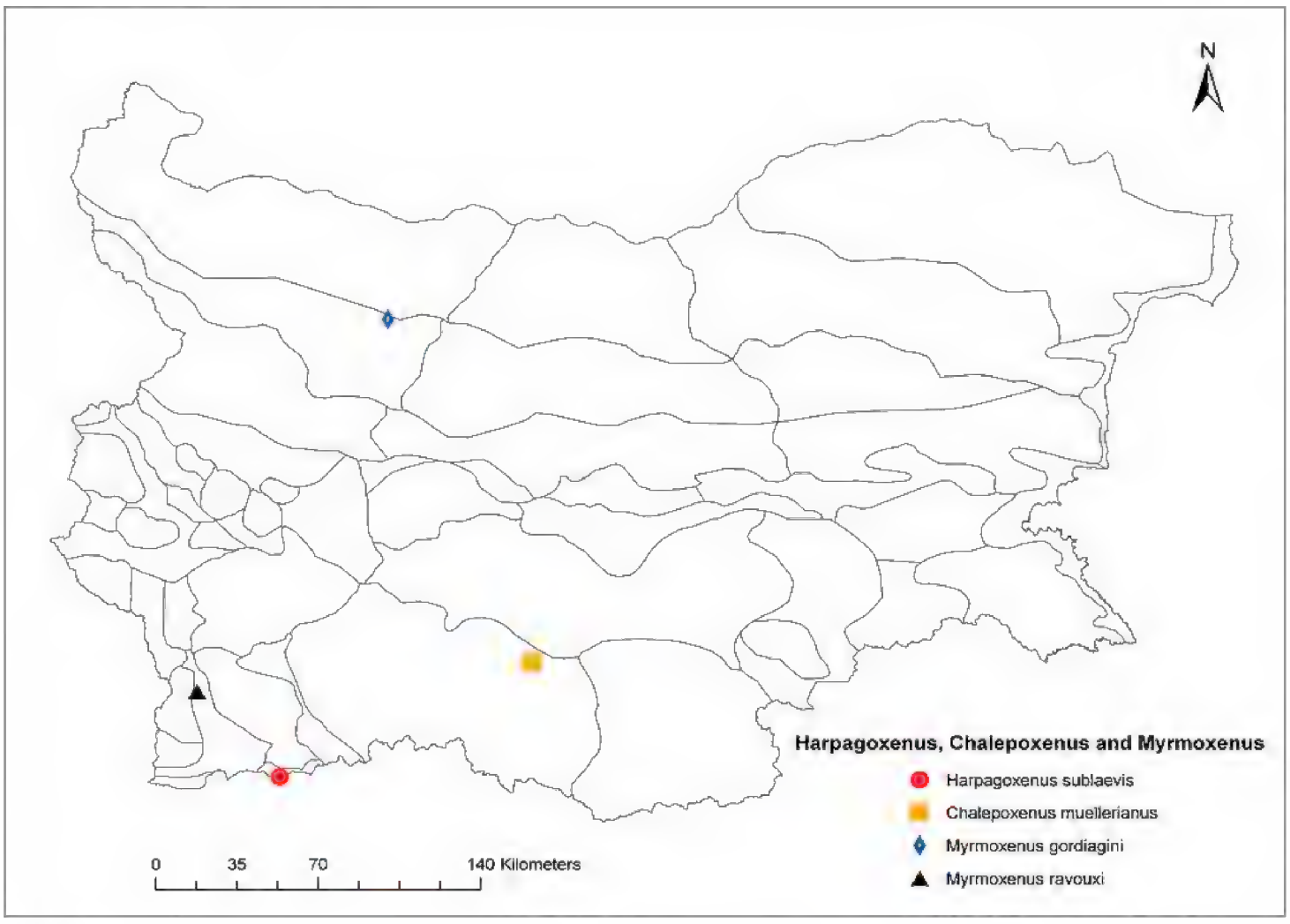
Map 24.


N
Solenopsis
S. fugax
0
35
70
140 Kilometers

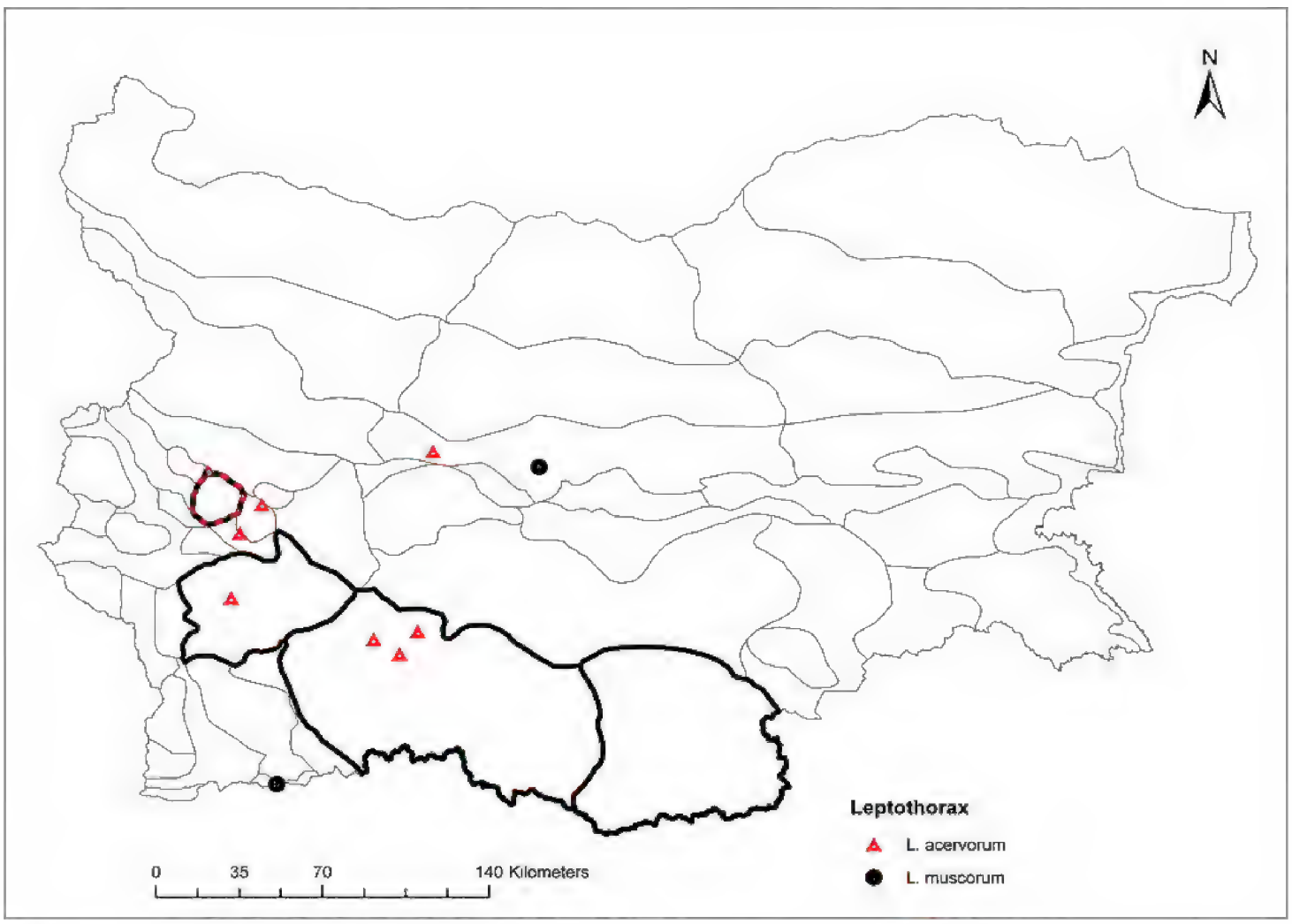
Map 25.


N
Formicoxenus
F. nitidulus
0
35
70
140 Kilometers

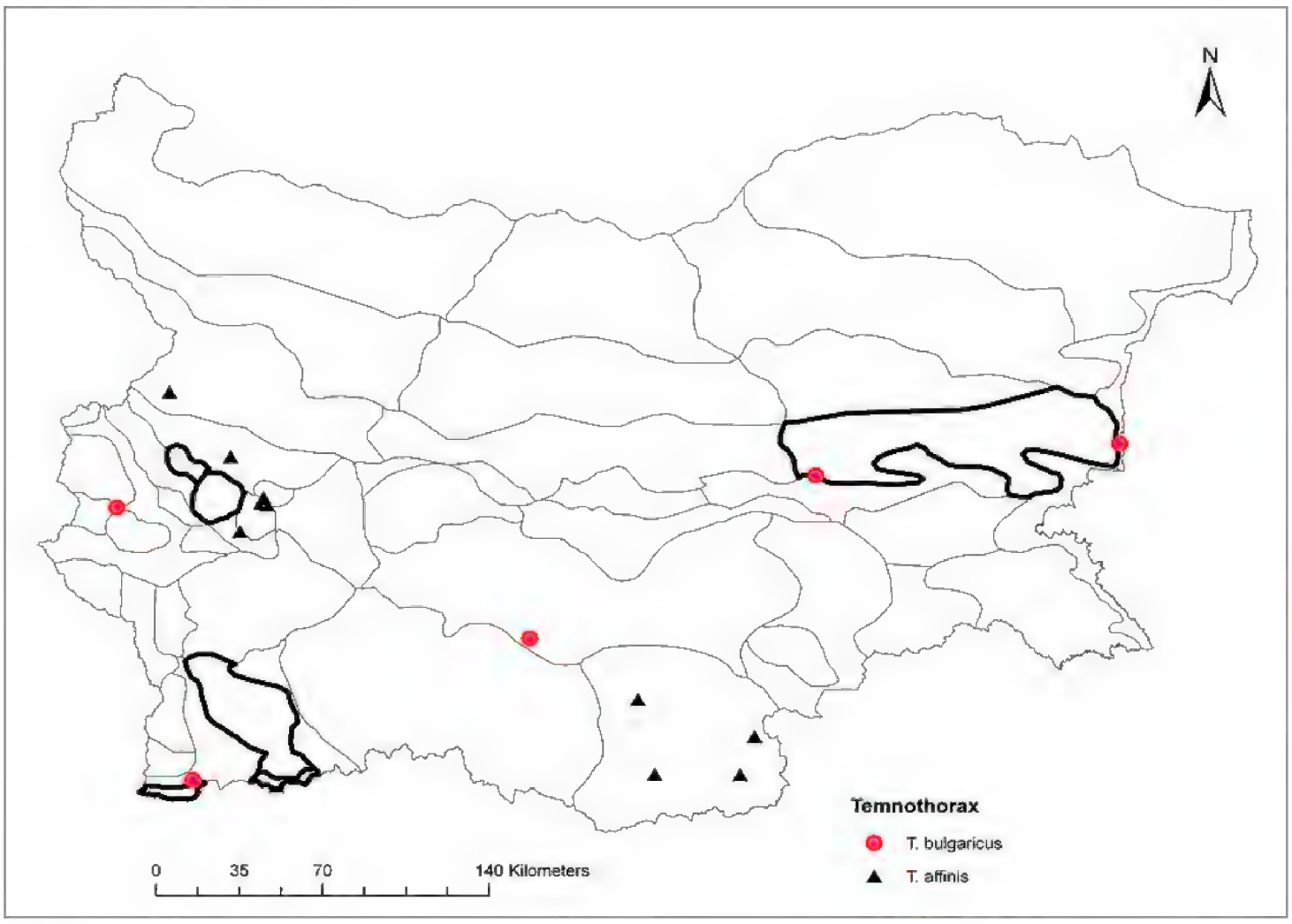
Map 26.


N
Harpagoxenus, Chalepoxenus and Myrmoxenus
Harpagoxenus sublaevis
Chalepoxenus muellerianus
Myrmoxenus gordiagini
Myrmoxenus ravouxi
0
35
70
140 Kilometers

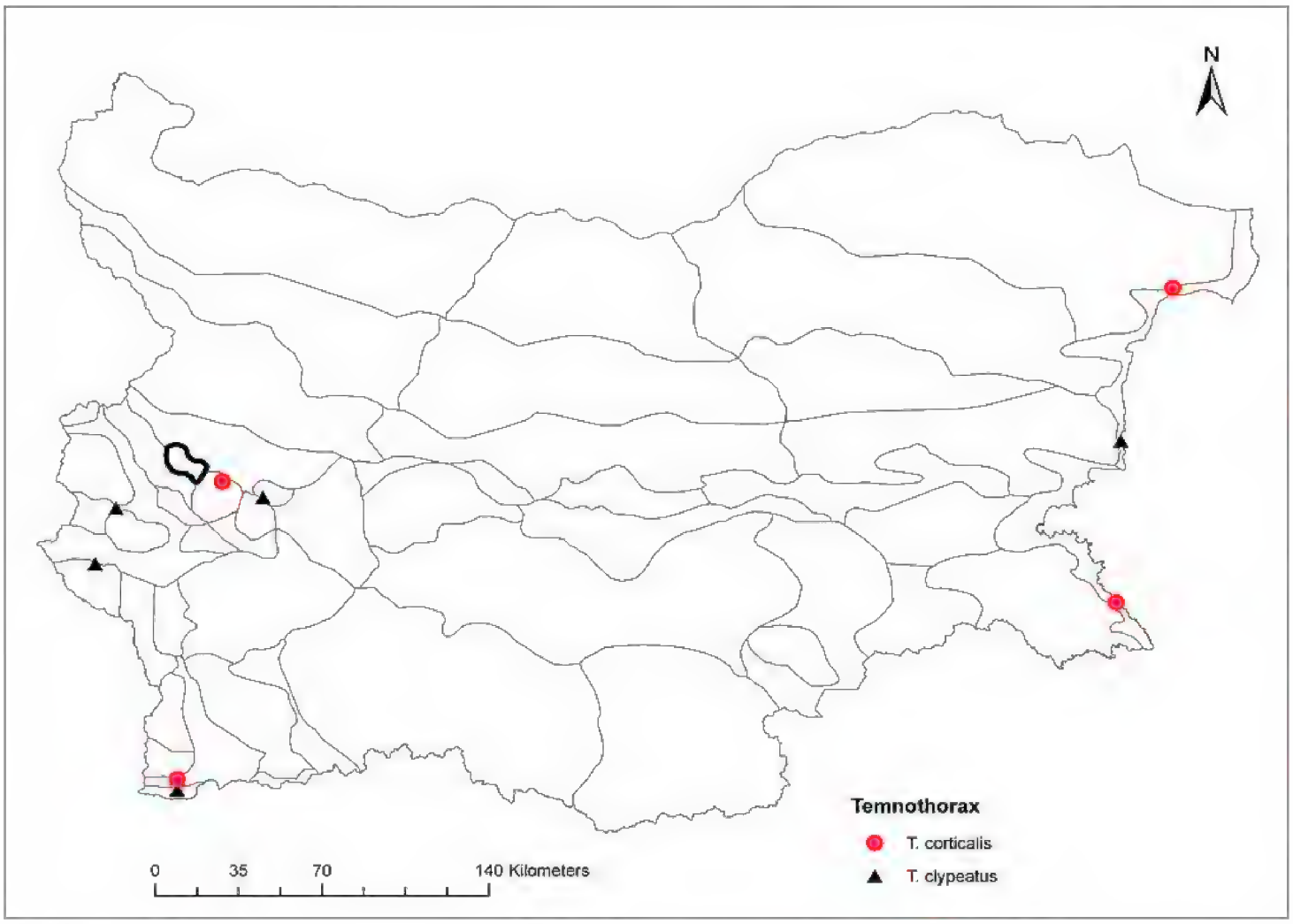
Map 27.


N
Leptothorax
L. acervorum
L. muscorum
0
35
70
140 Kilometers

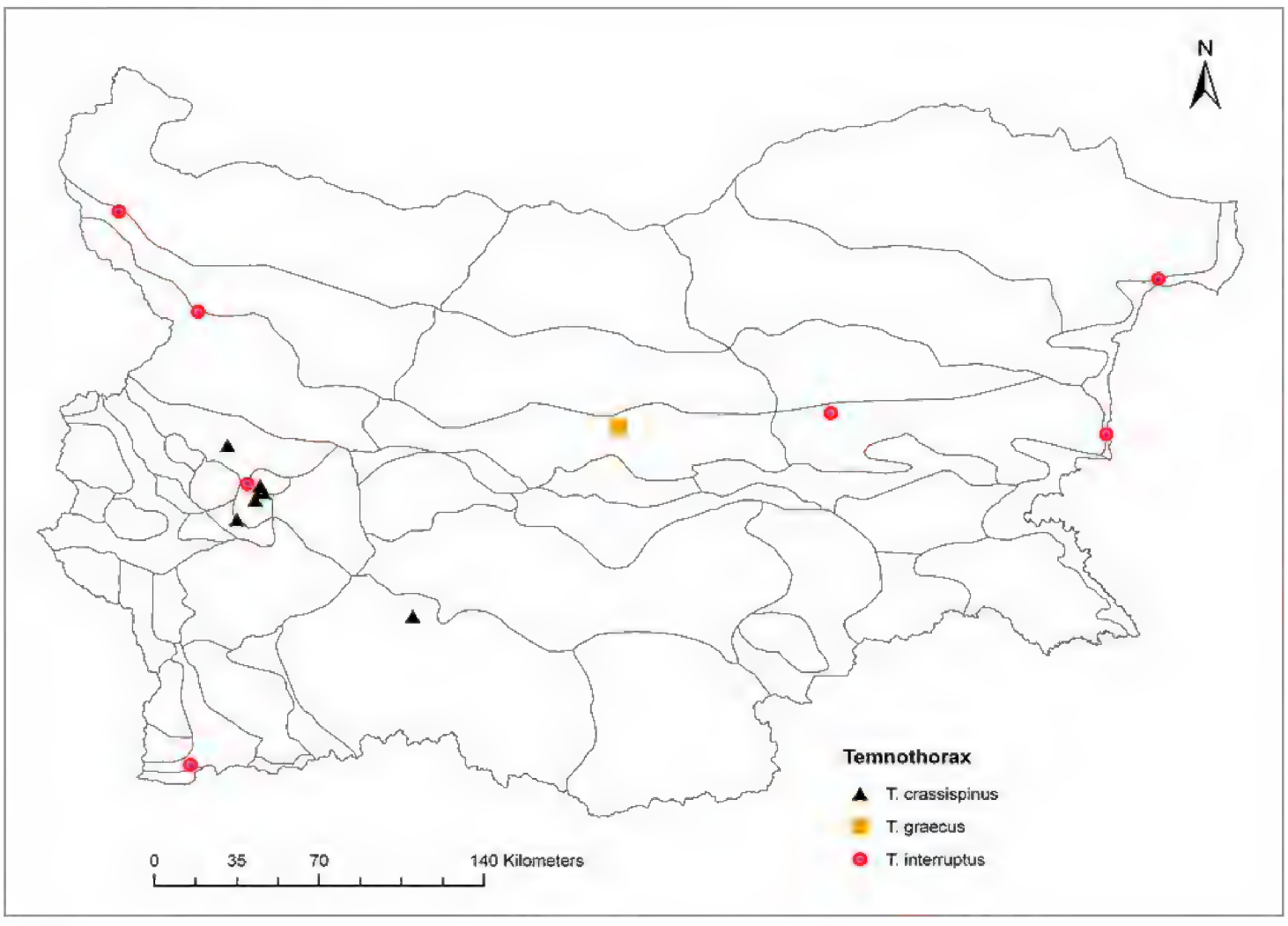
Map 28.


N
Temnothorax
T. bulgaricus
T. affinis
0
35
70
140 Kilometers

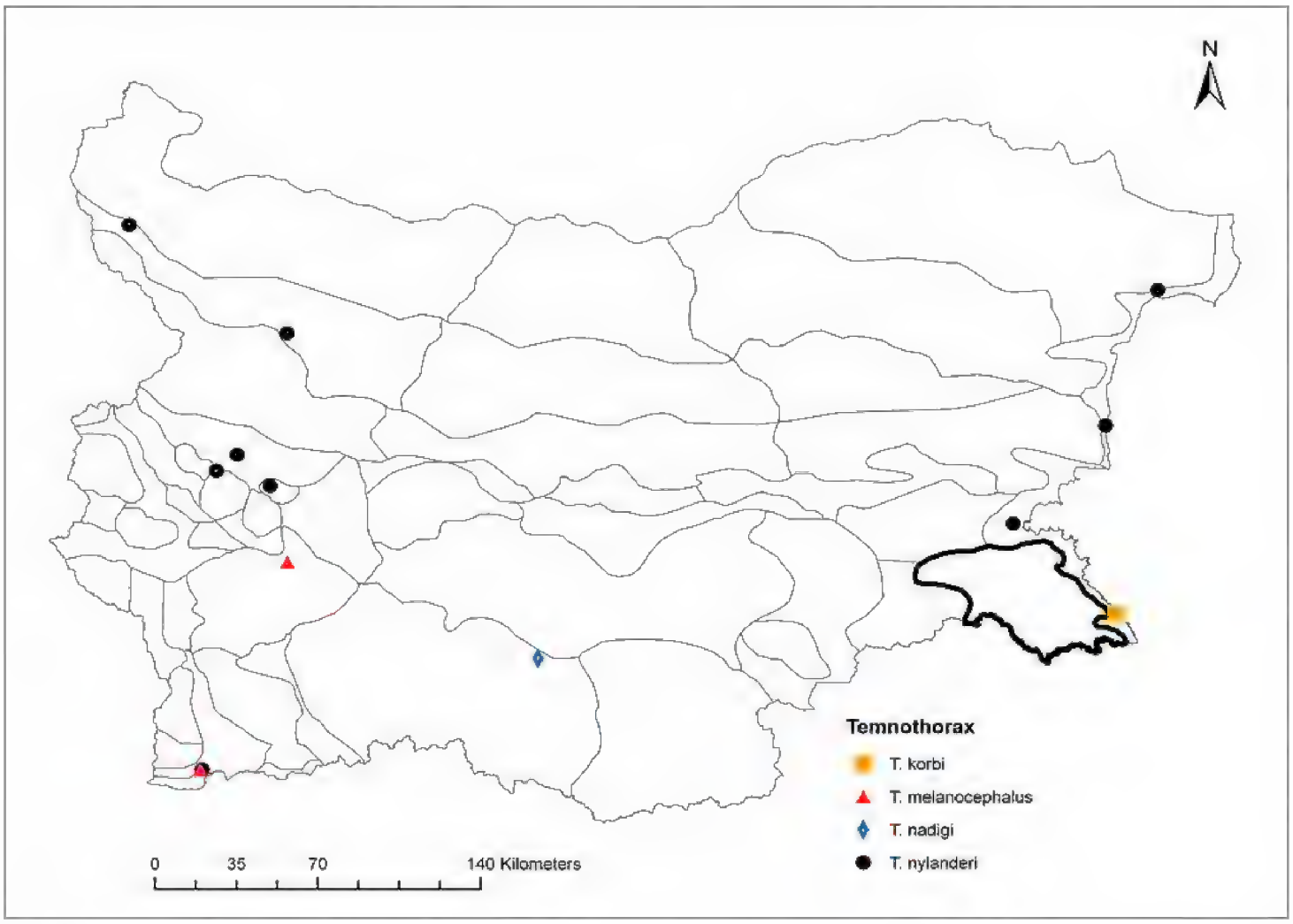
Map 29.


N
Temnothorax
T. corticalis
T. clypeatus
0
35
70
140 Kilometers

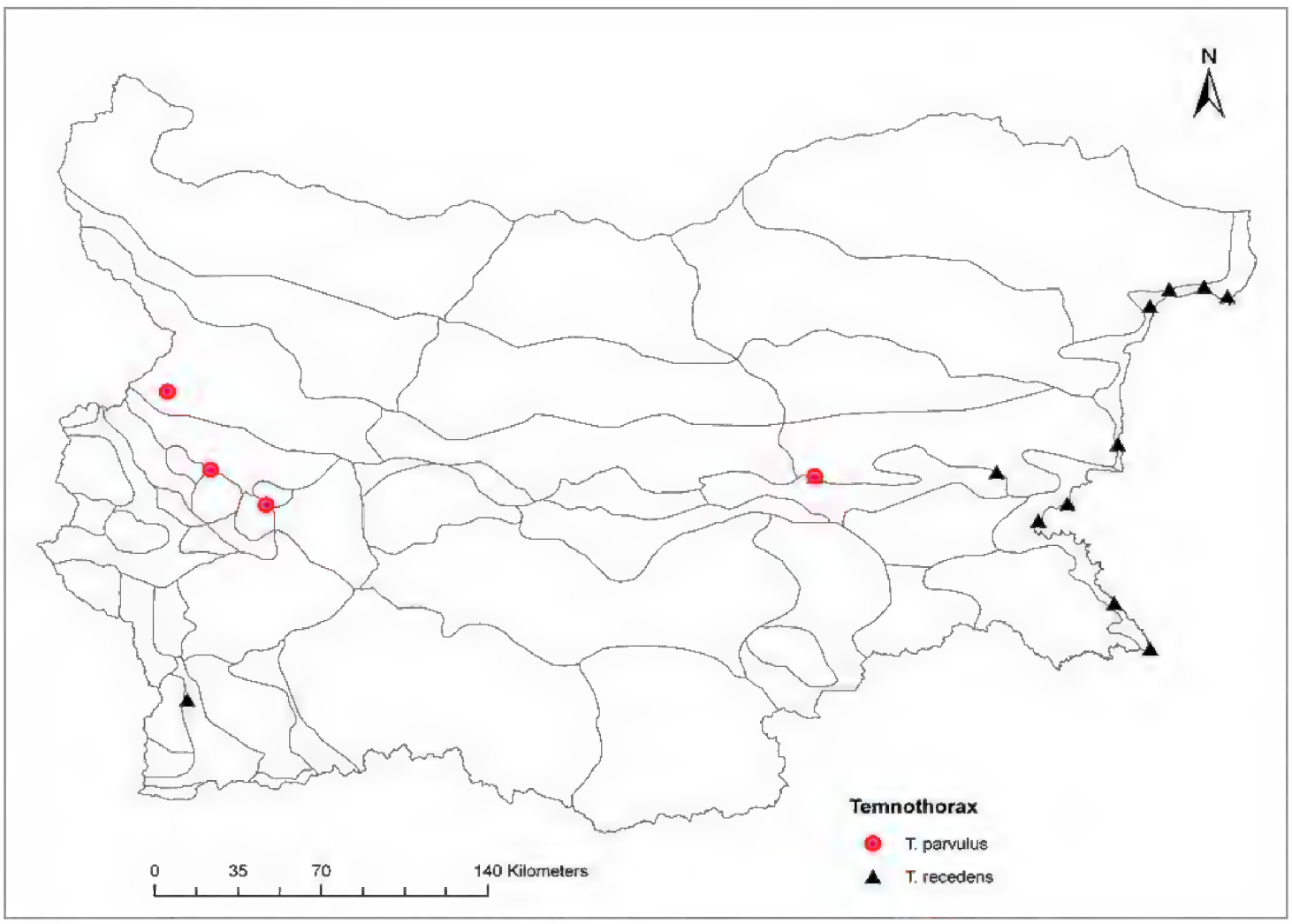
Map 30.


N
Temnothorax
T. crassispinus
T. graecus
T. interruptus
0
35
70
140 Kilometers

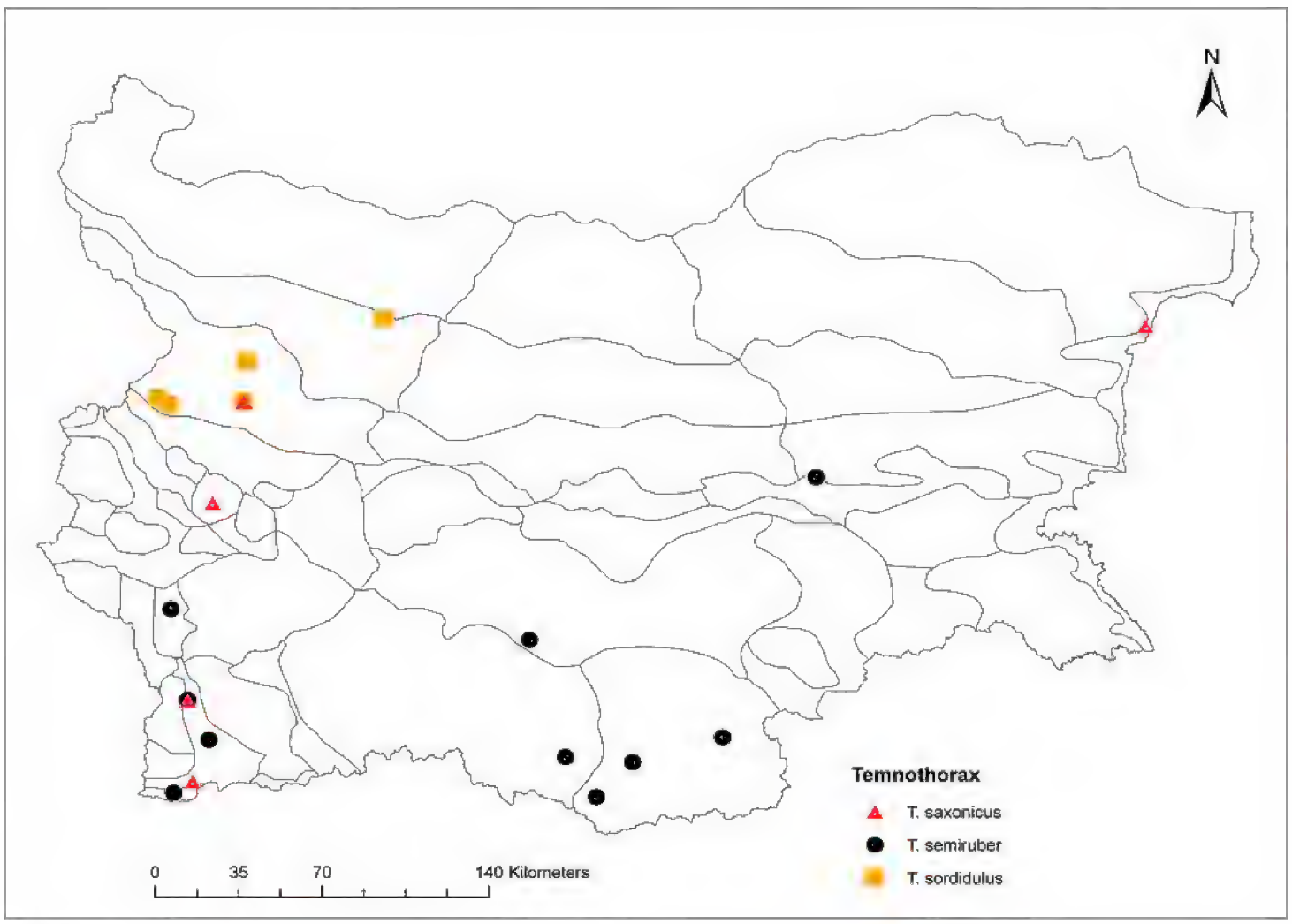
Map 31.


N
Temnothorax
T. korbi
T. melanocephalus
T. nadigi
T. nylanderi
0
35
70
140 Kilometers

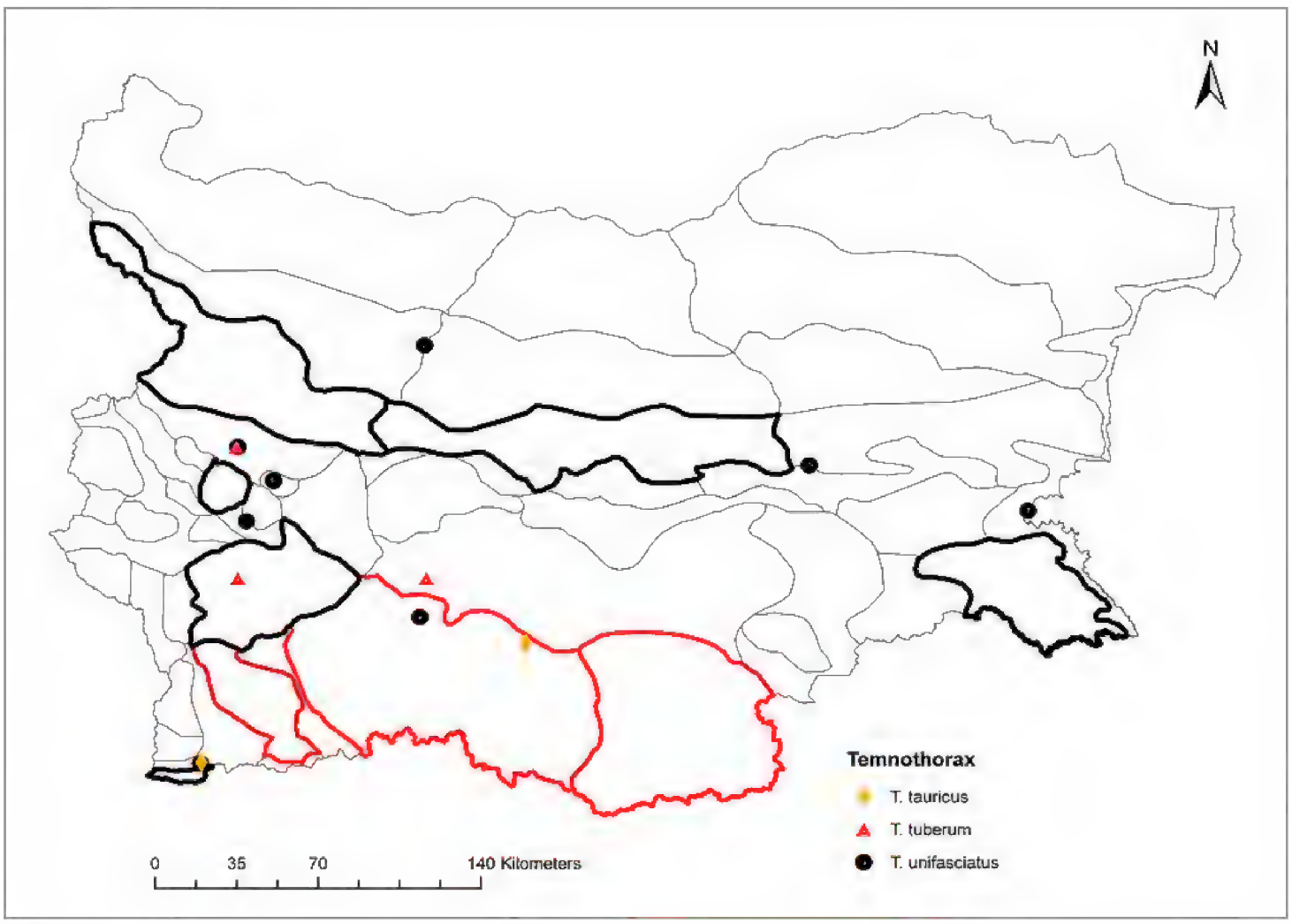
Map 32.


N
Temnothorax
T. parvulus
T. recedens
0
35
70
140 Kilometers

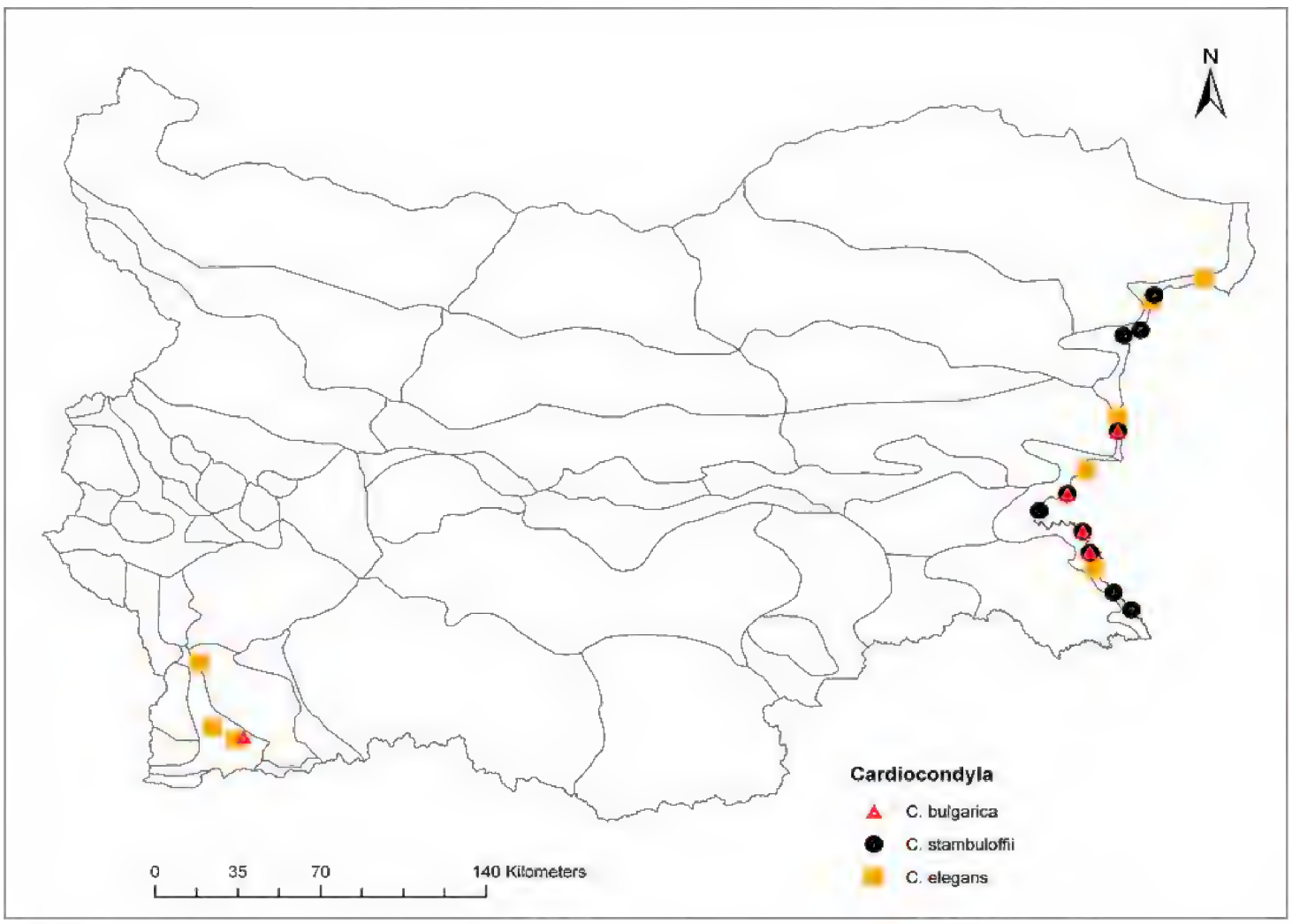
Map 33.


N
Temnothorax
T. saxonicus
T. semiruber
T. sordidulus
0
35
70
140 Kilometers

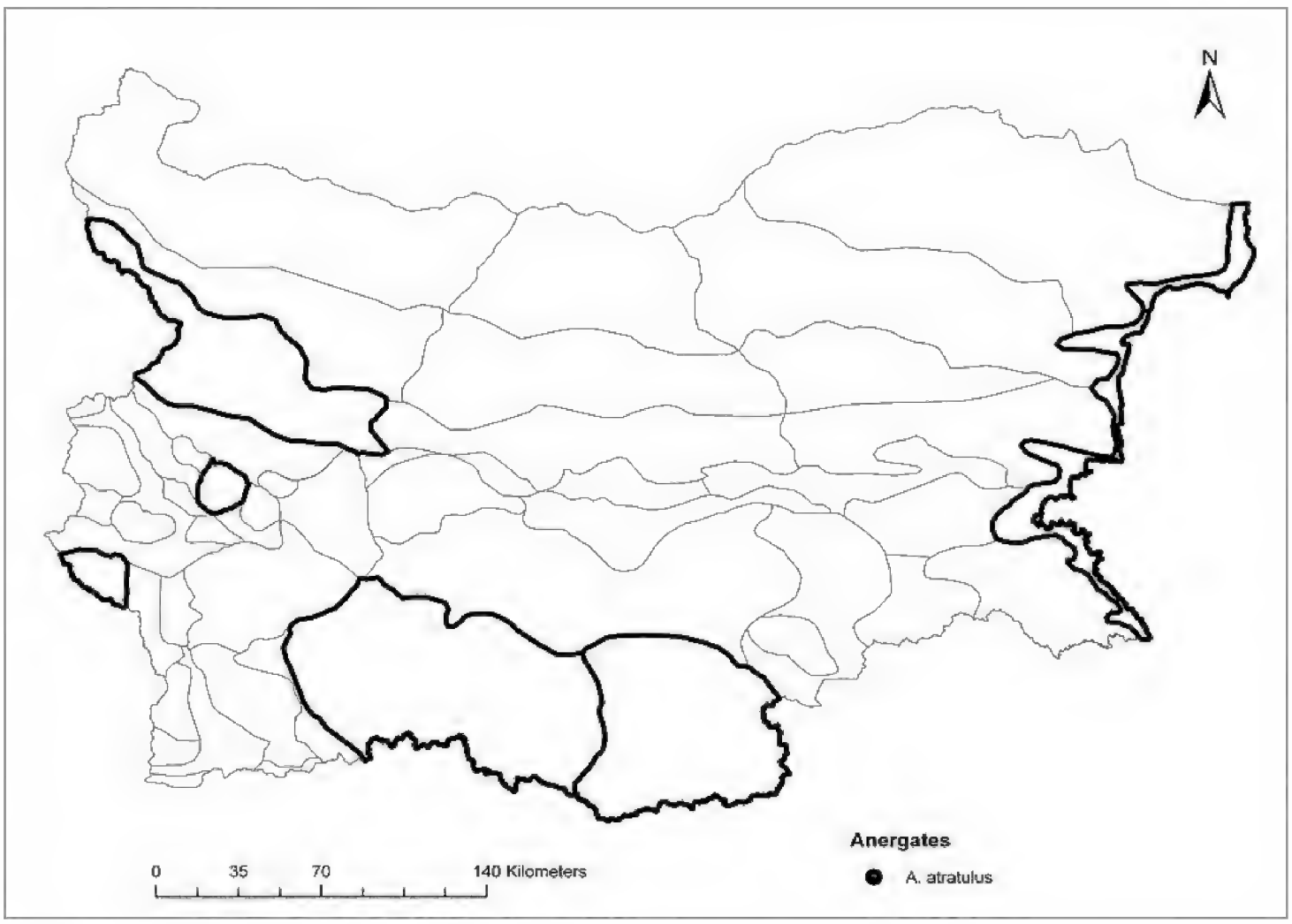
Map 34.


N
Temnothorax
T. tauricus
T. tuberum
T. unifasciatus
0
35
70
140 Kilometers

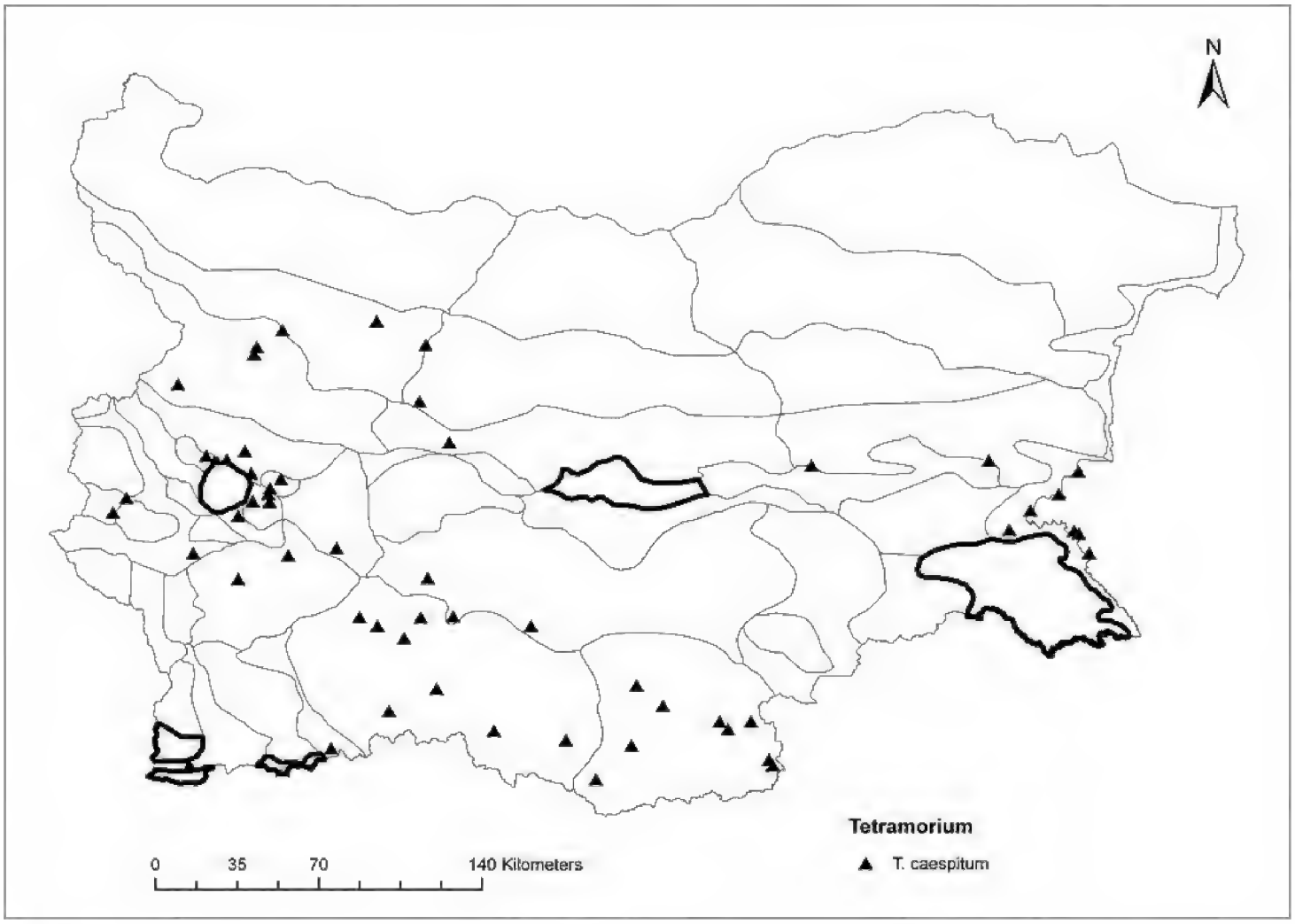
Map 35.


N
Cardiocondyla
C. bulgarica
C. stambuloffii
C. elegans
0
35
70
140 Kilometers

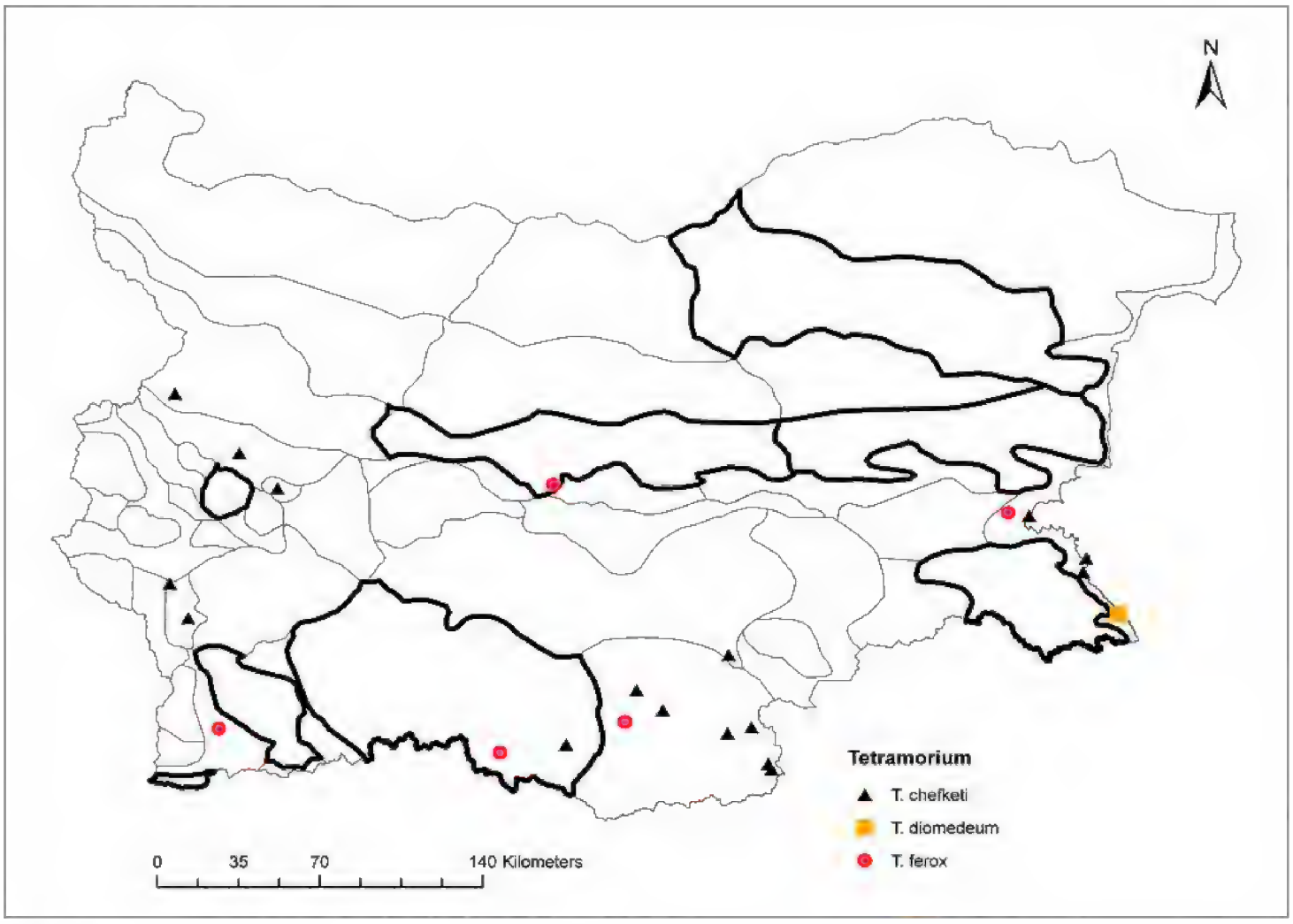
Map 36.


N
Anergates
A. atratulus
0
35
70
140 Kilometers

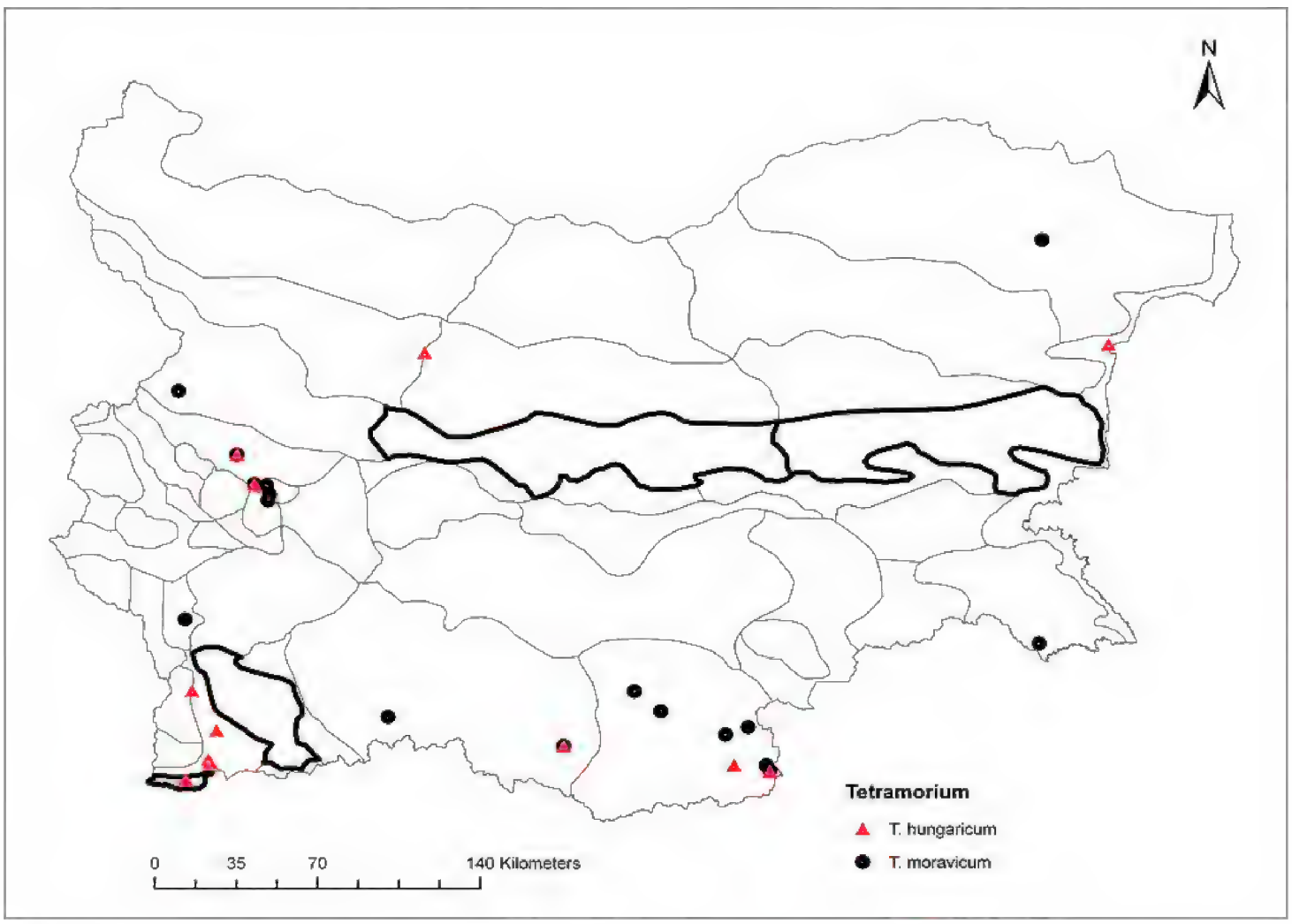
Map 37.


N
Tetramorium
T. caespitum
0
35
70
140 Kilometers

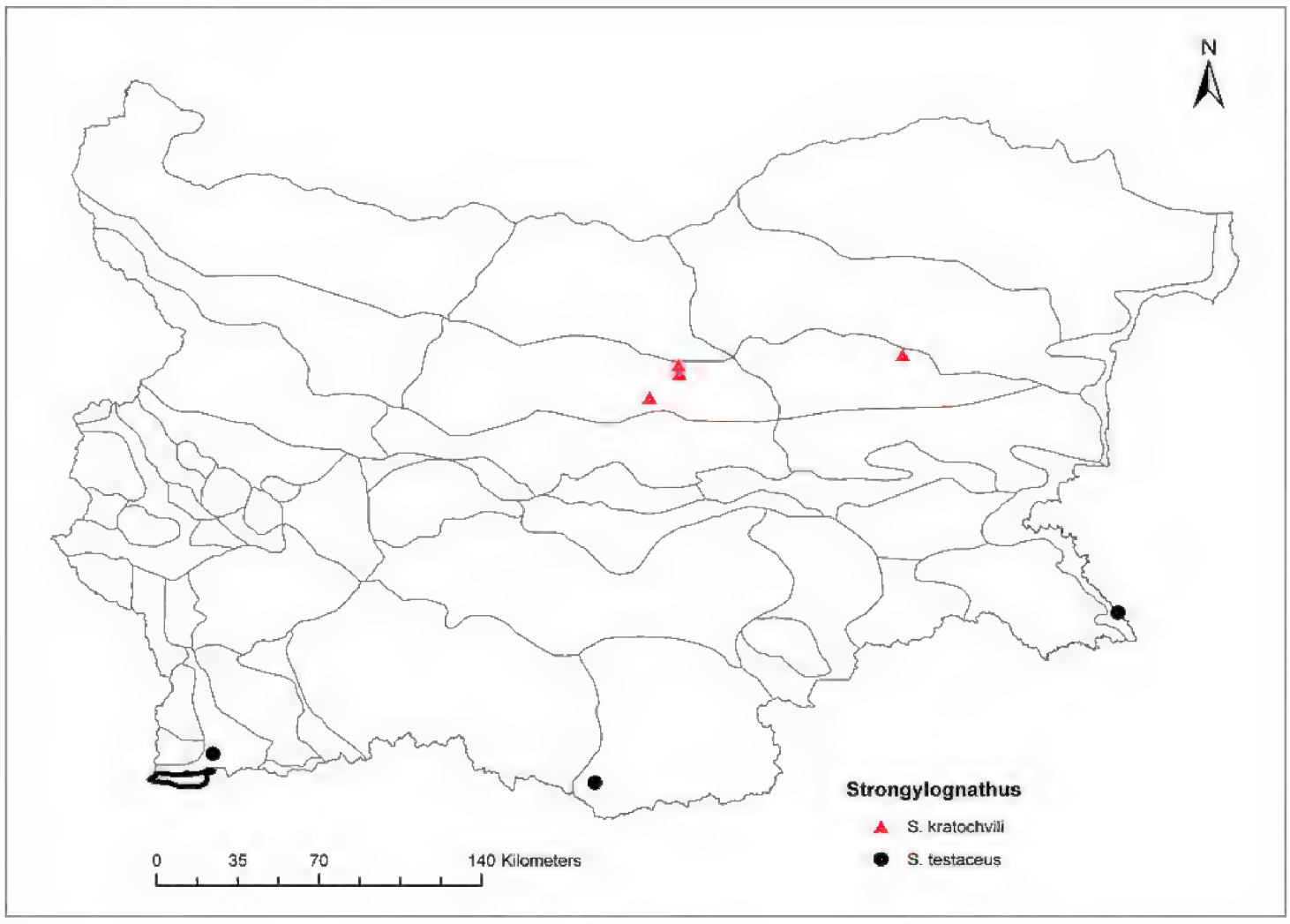
Map 38.


N
Tetramorium
T. chefketi
T. diomedeum
T. ferox
0
35
70
140 Kilometers

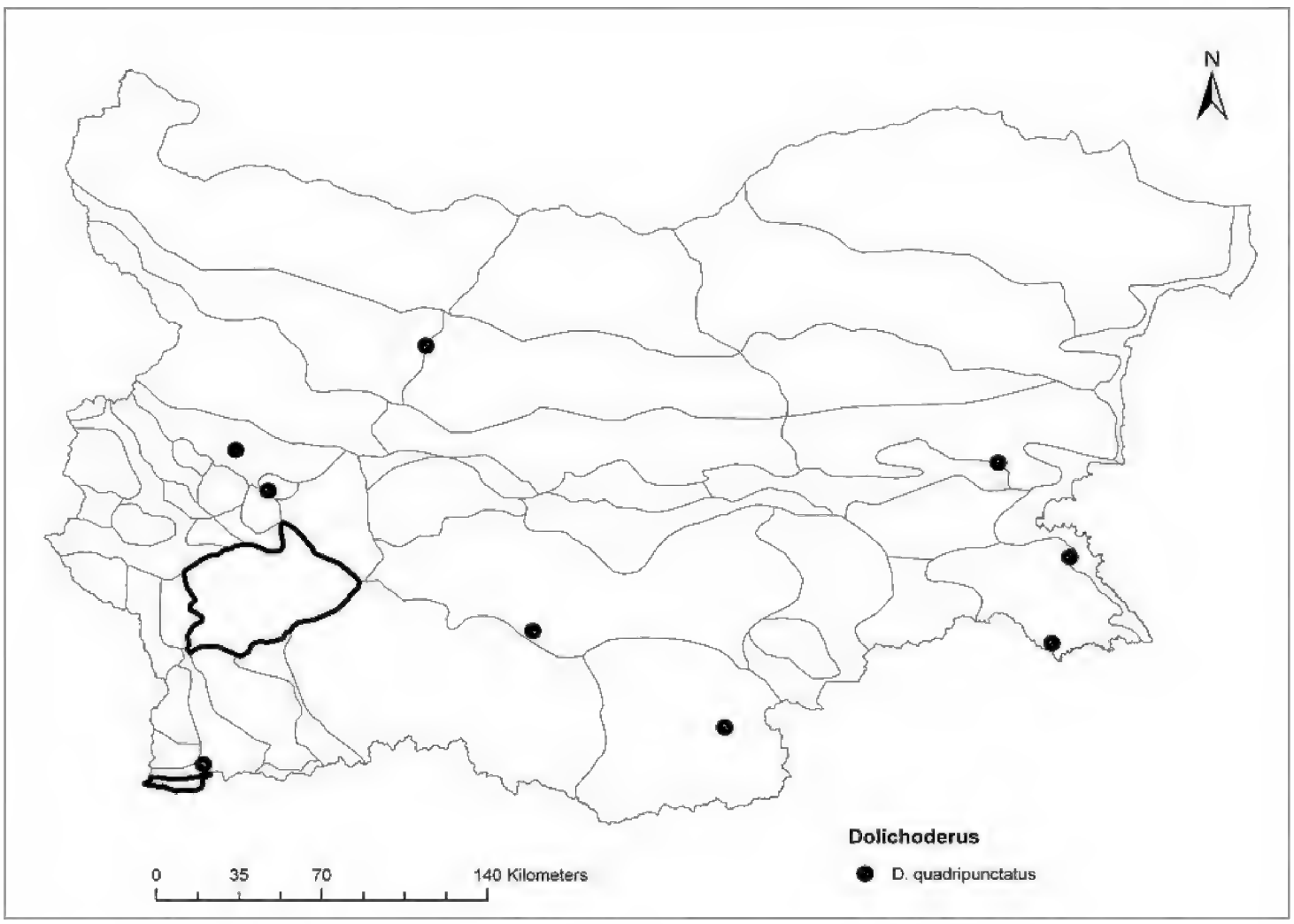
Map 39.


N
Tetramorium
T. hungaricum
T. moravicum
0
35
70
140 Kilometers

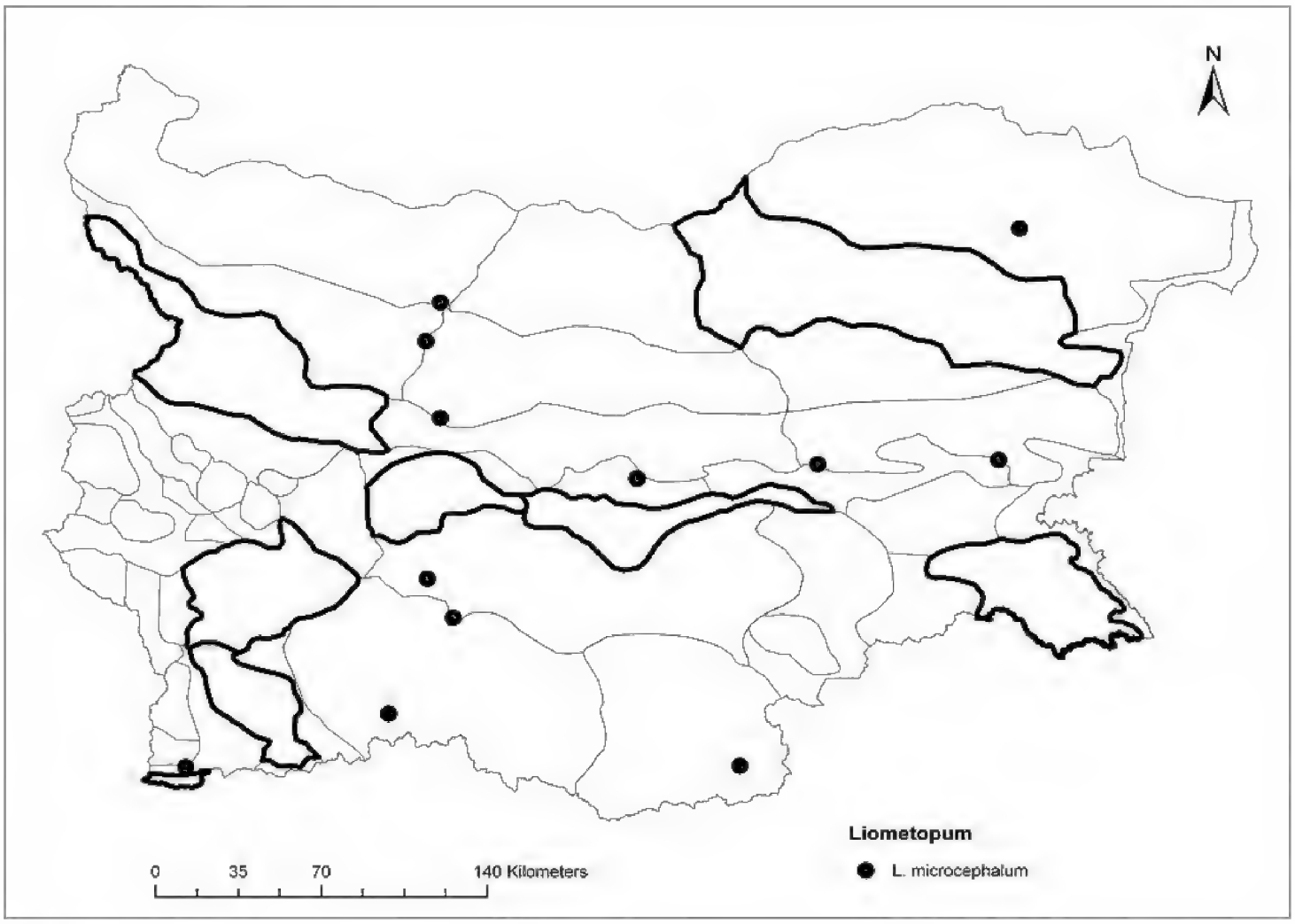
Map 40.


N
Strongylognathus
S. kratochvili
S. testaceus
0
35
70
140 Kilometers

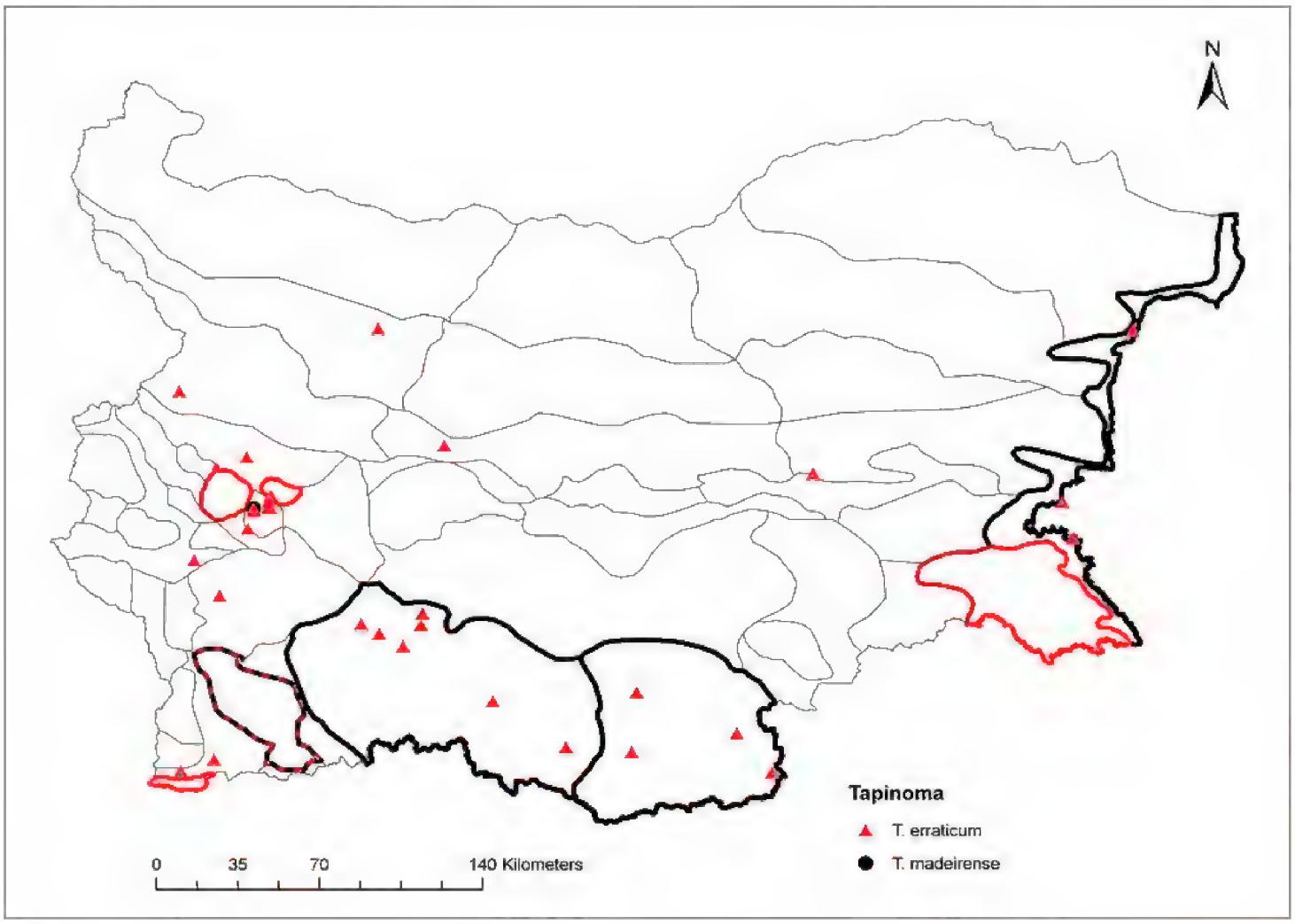
Map 41.


N
Dolichoderus
D. quadripunctatus
0
35
70
140 Kilometers

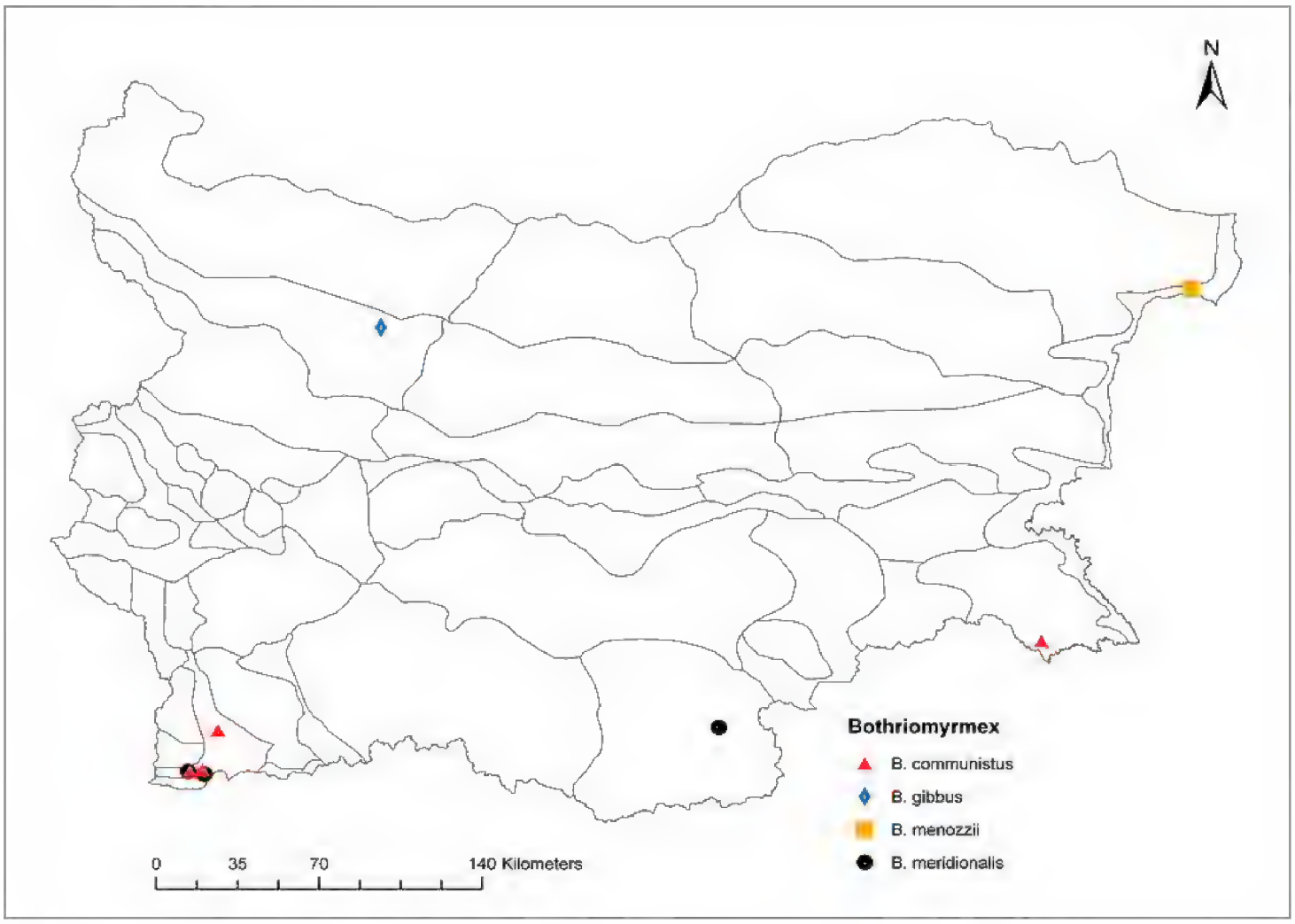
Map 42.


N
Liometopum
L. microcephalum
0
35
70
140 Kilometers

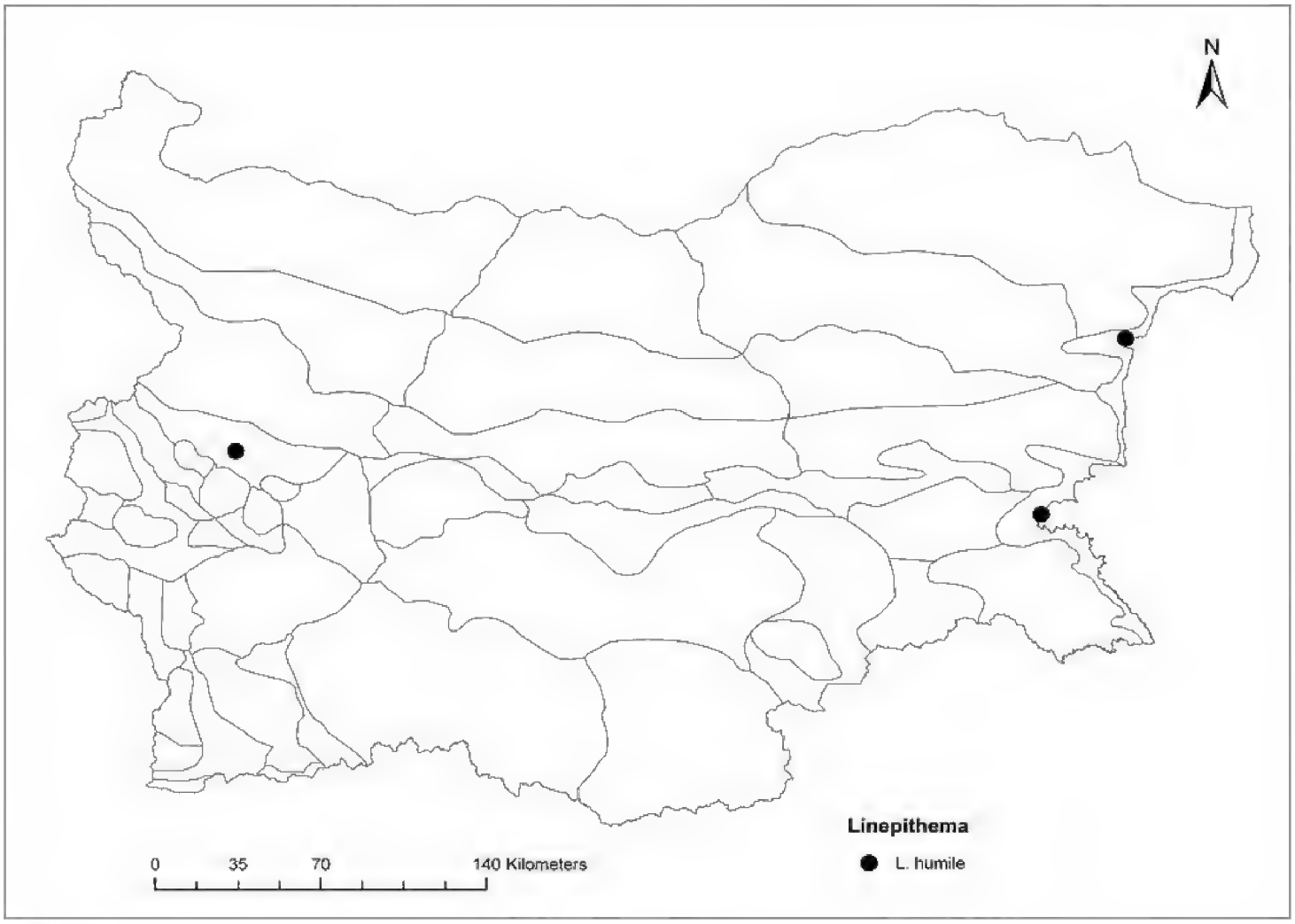
Map 43.


N
Tapinoma
T. erraticum
T. madeirense
0
35
70
140 Kilometers

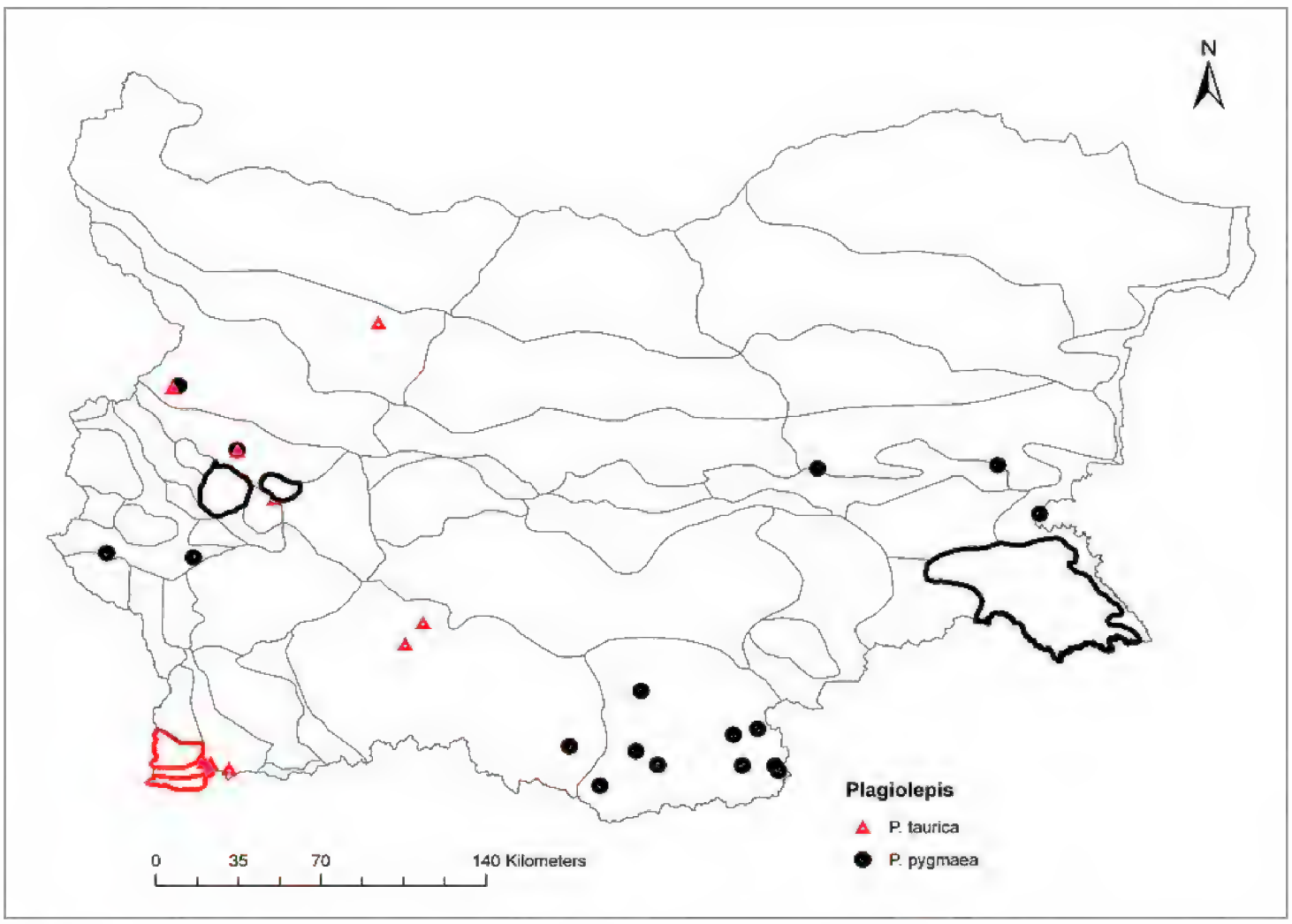
Map 44.


N
Bothriomyrmex
B. communistus
B. gibbus
B. menozzii
B. meridionalis
0
35
70
140 Kilometers

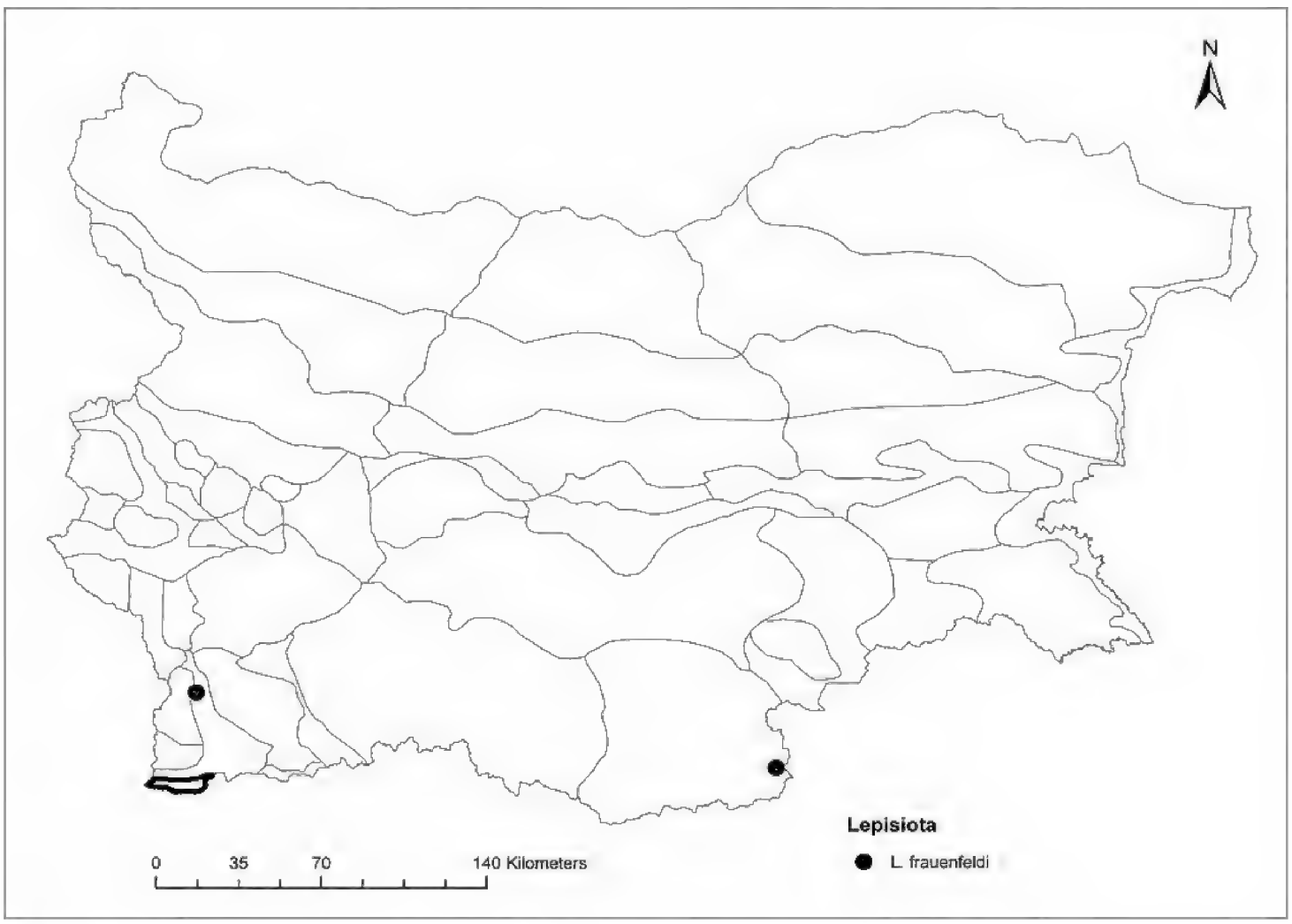
Map 45.


N
Linepithema
L. humile
0
35
70
140 Kilometers

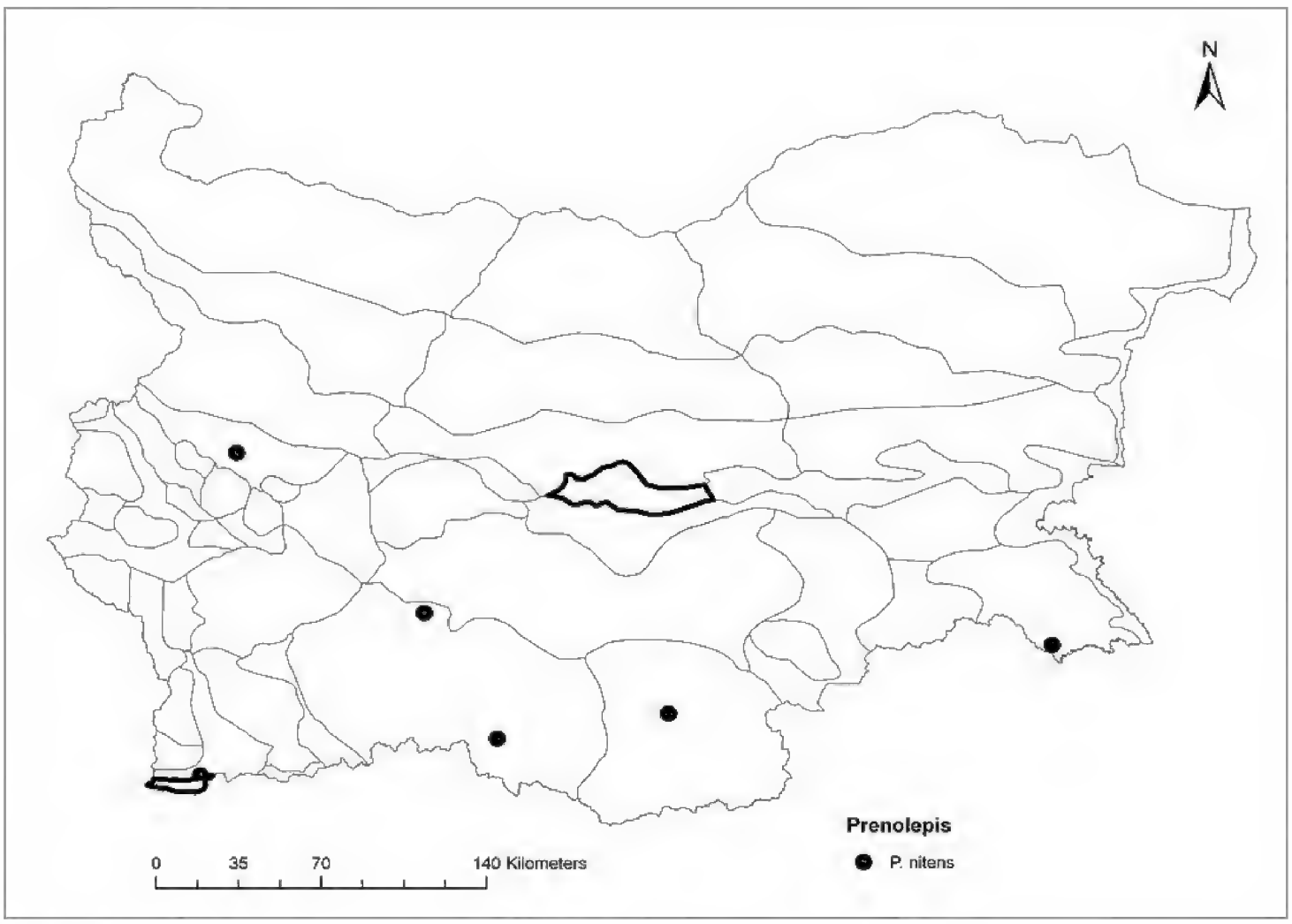
Map 46.


N
Plagiolepis
P. taurica
P. pygmaea
0
35
70
140 Kilometers

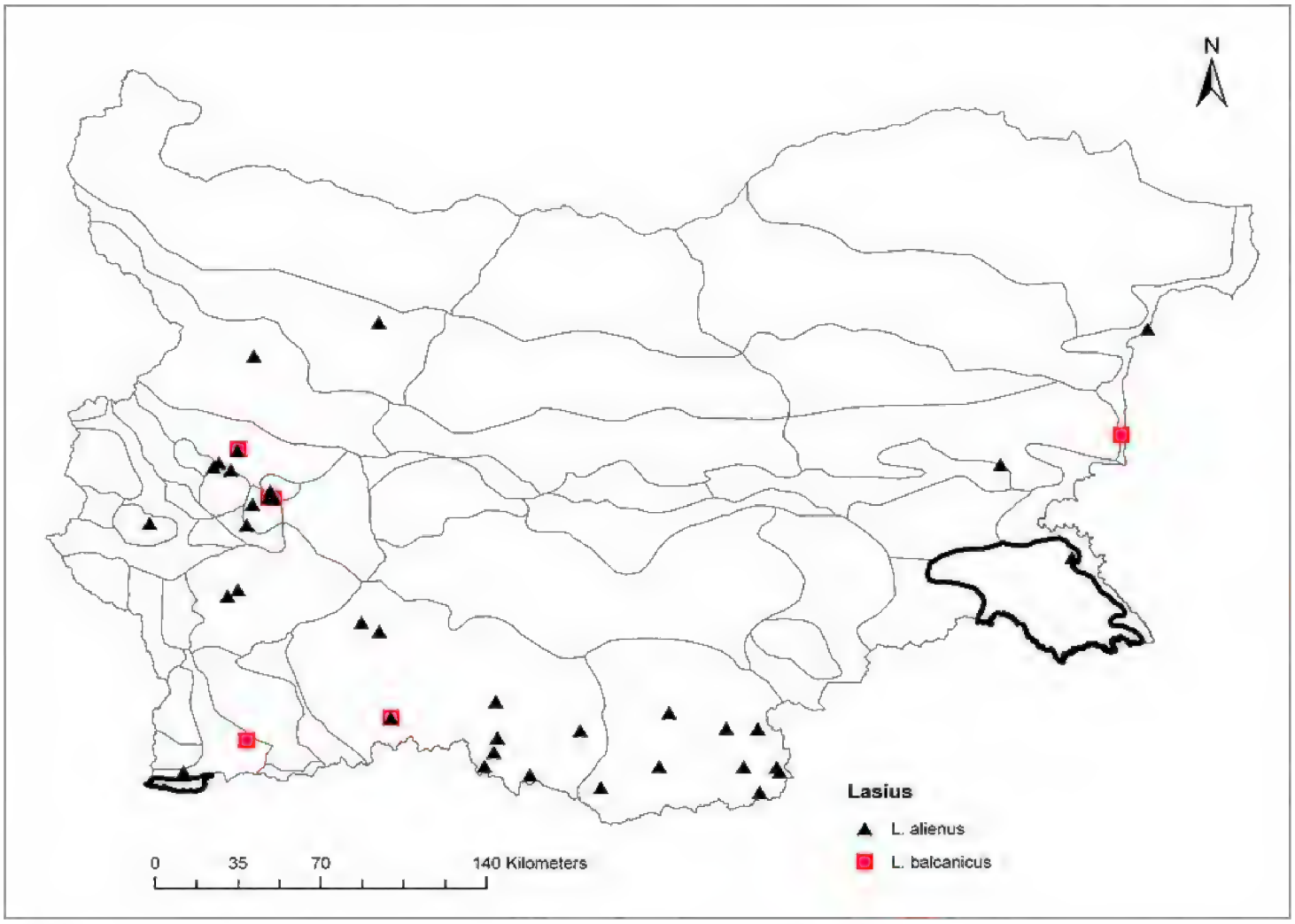
Map 47.


N
Lepisiota
L. frauenfeldi
0
35
70
140 Kilometers

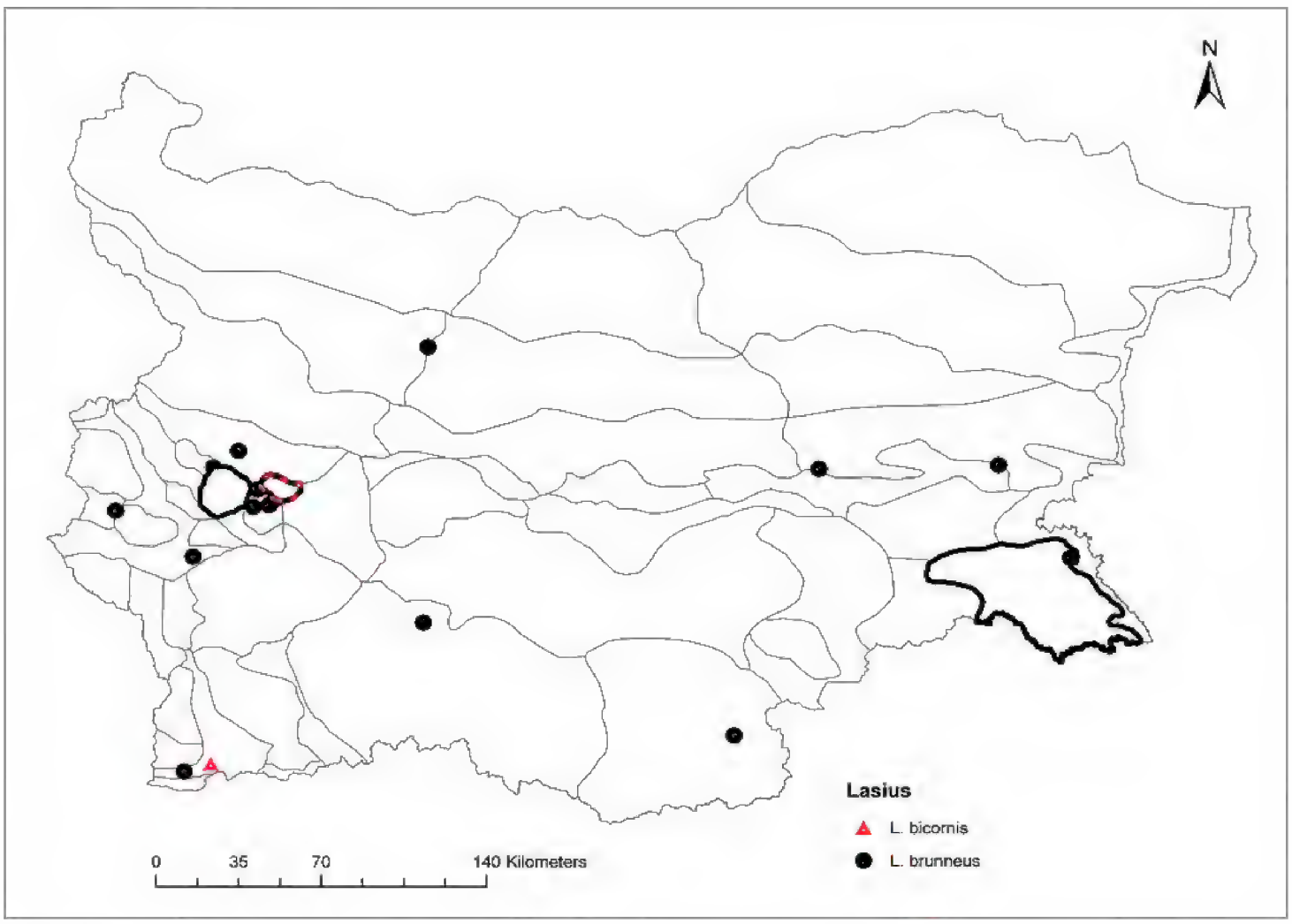
Map 48.


N
Prenolepis
P. nitens
0
35
70
140 Kilometers

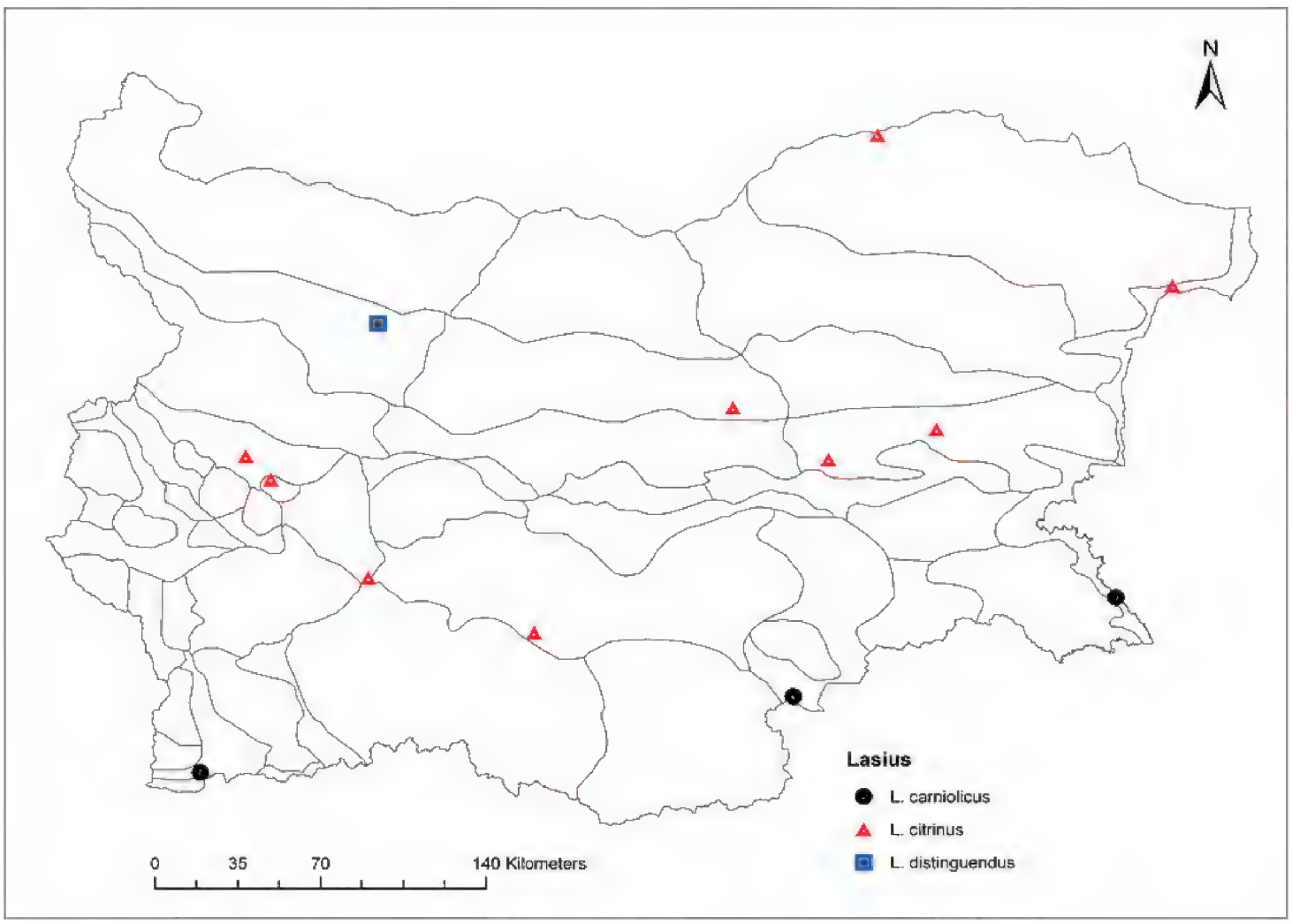
Map 49.


N
Lasius
L. alienus
L. balcanicus
0
35
70
140 Kilometers

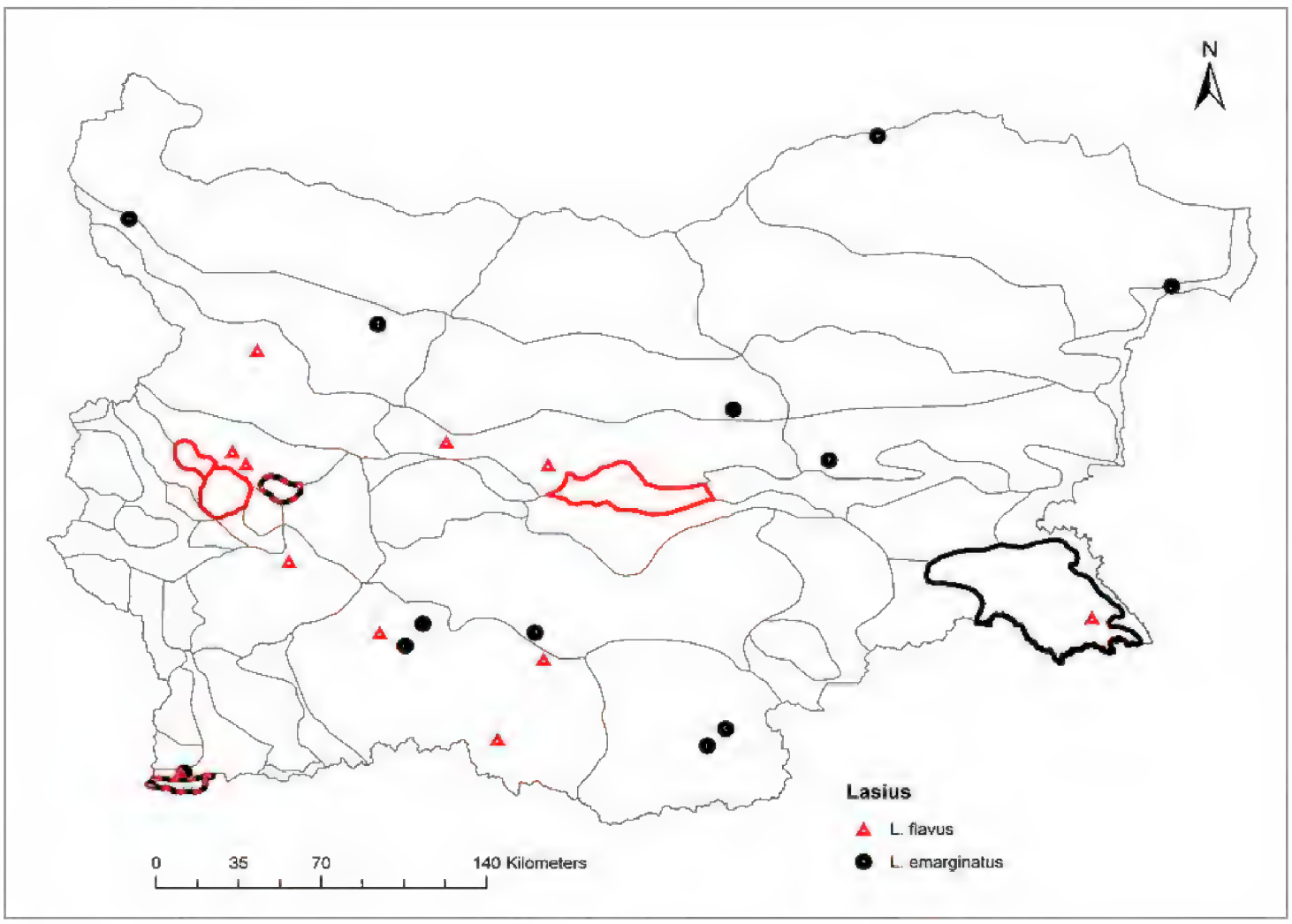
Map 50.


N
Lasius
L. bicornis
L. brunneus
0
35
70
140 Kilometers

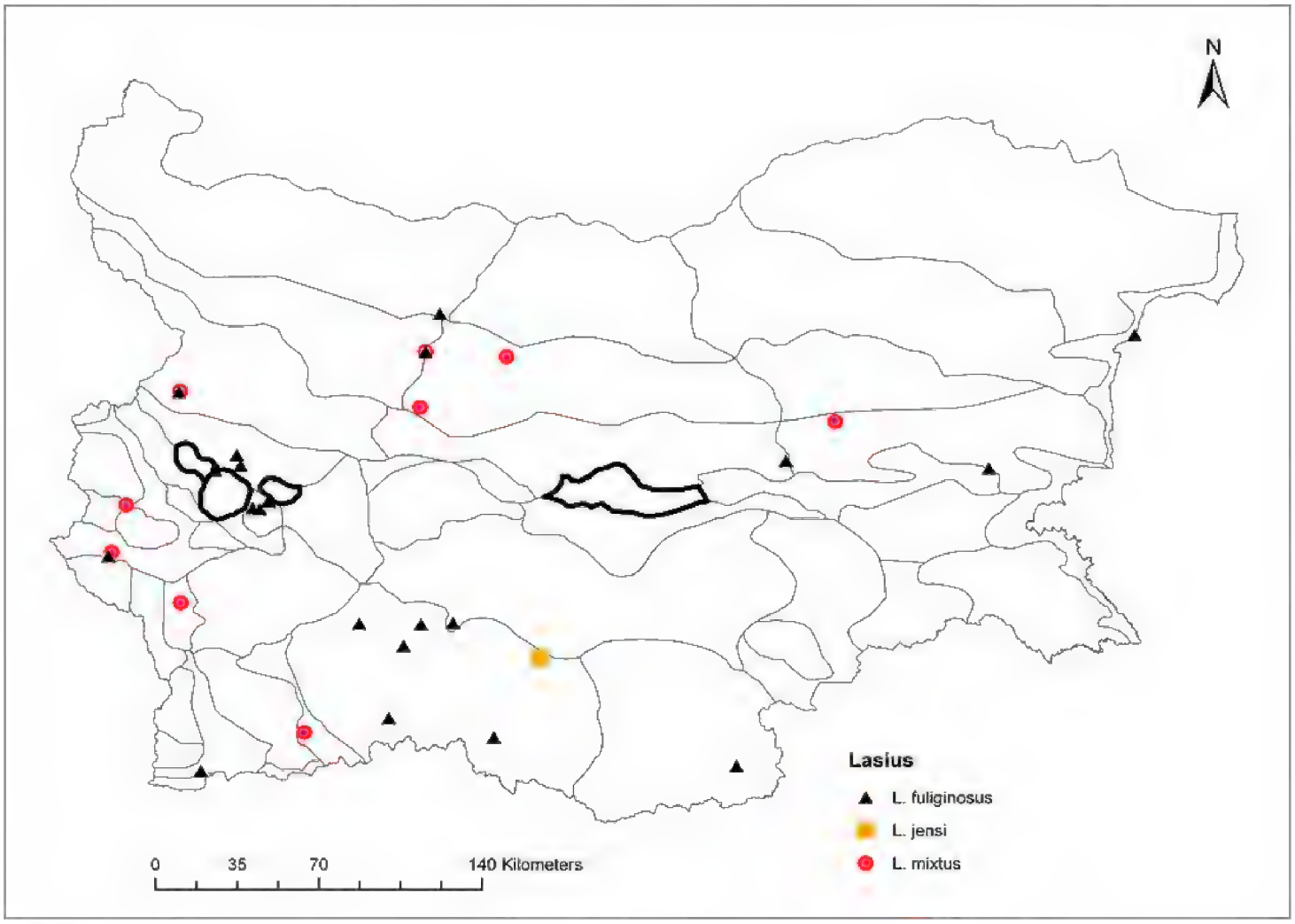
Map 51.


N
Lasius
L. carniolicus
L. citrinus
L. distinguendus
0
35
70
140 Kilometers

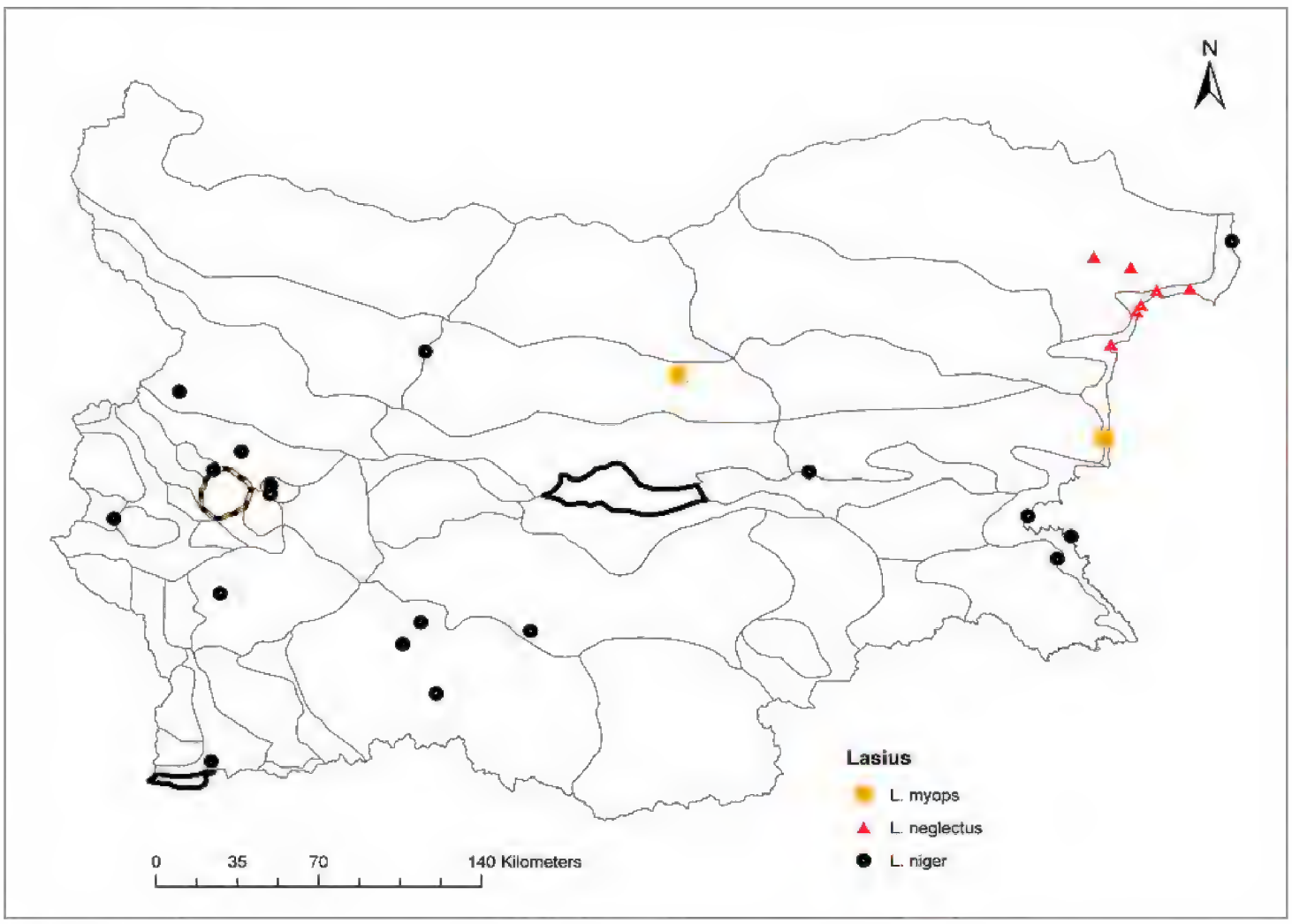
Map 52.


N
Lasius
L. flavus
L. emarginatus
0
35
70
140 Kilometers

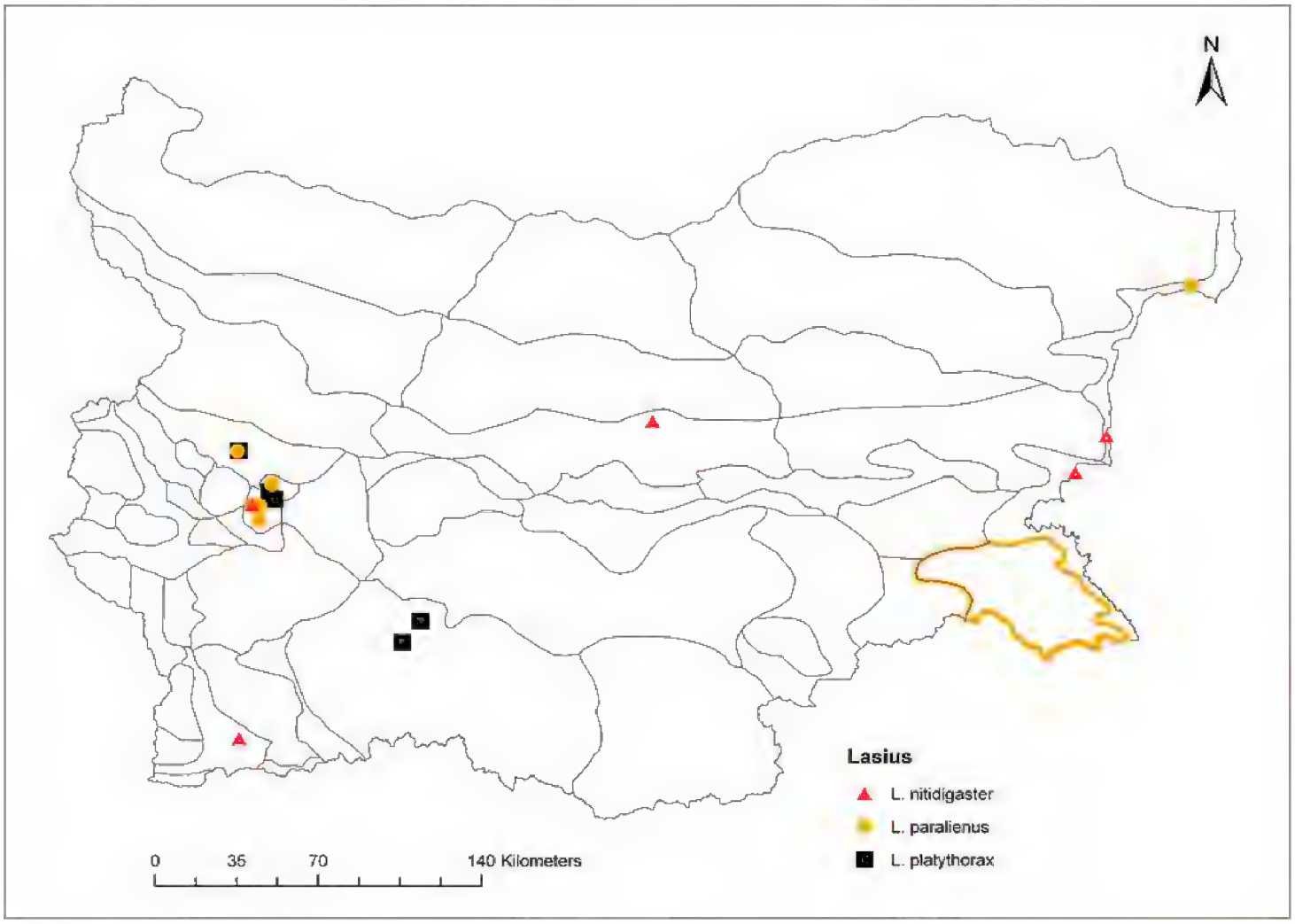
Map 53.


N
Lasius
L. fuliginosus
L. jensi
L. mixtus
0
35
70
140 Kilometers

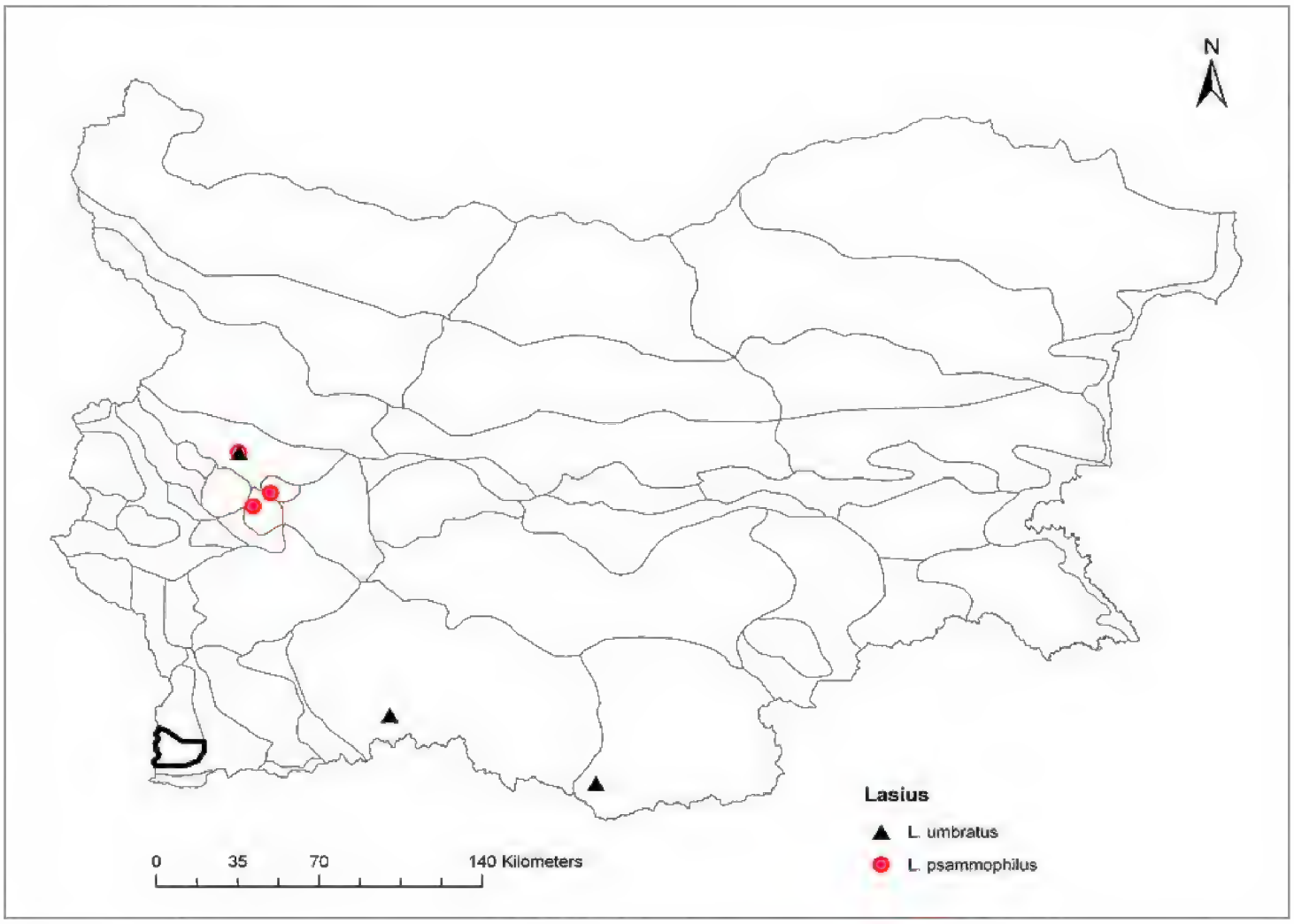
Map 54.


N
Lasius
L. myops
L. neglectus
L. niger
0
35
70
140 Kilometers

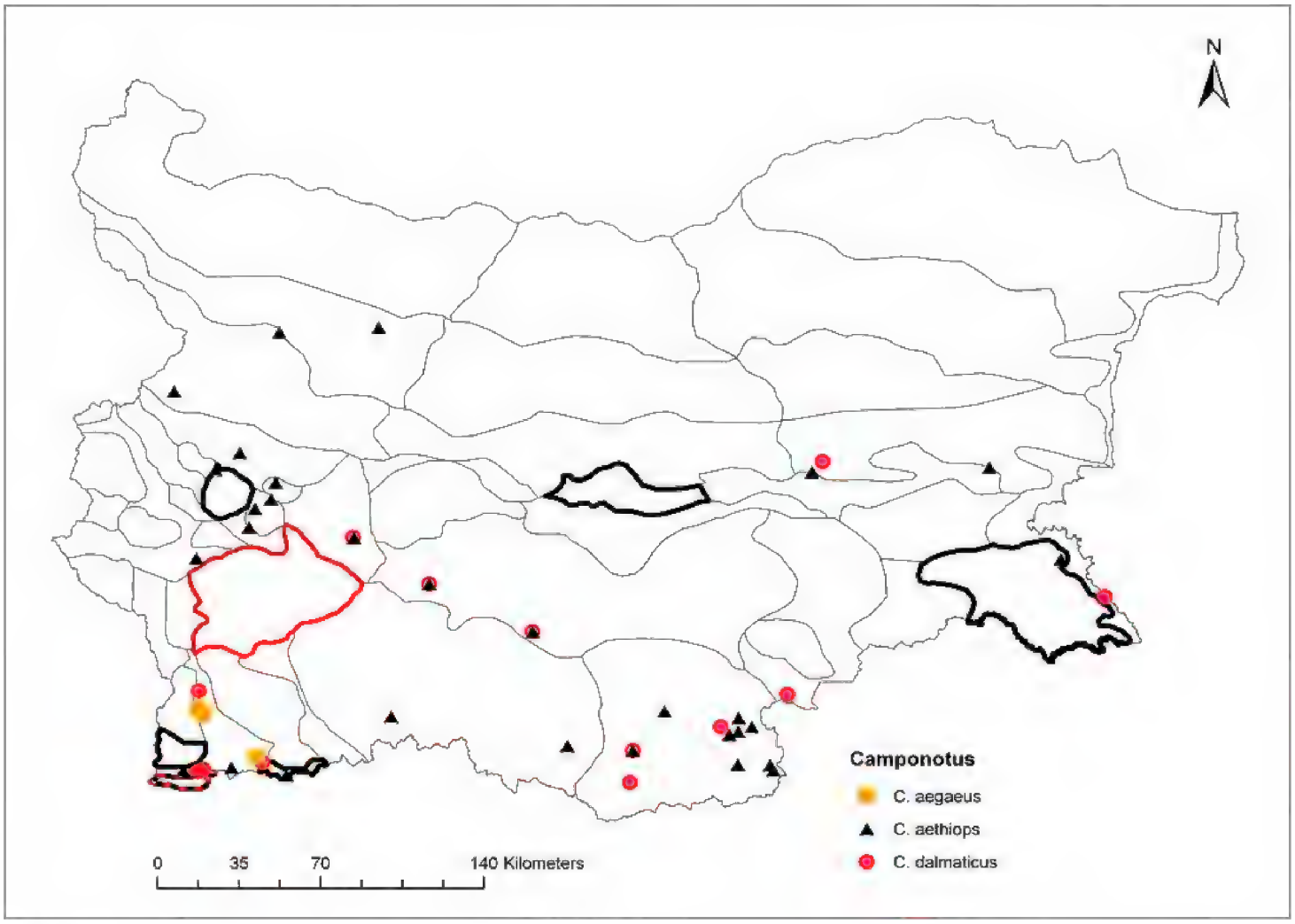
Map 55.


N
Lasius
L. nitidigaster
L. paralienus
L. platythorax
0
35
70
140 Kilometers

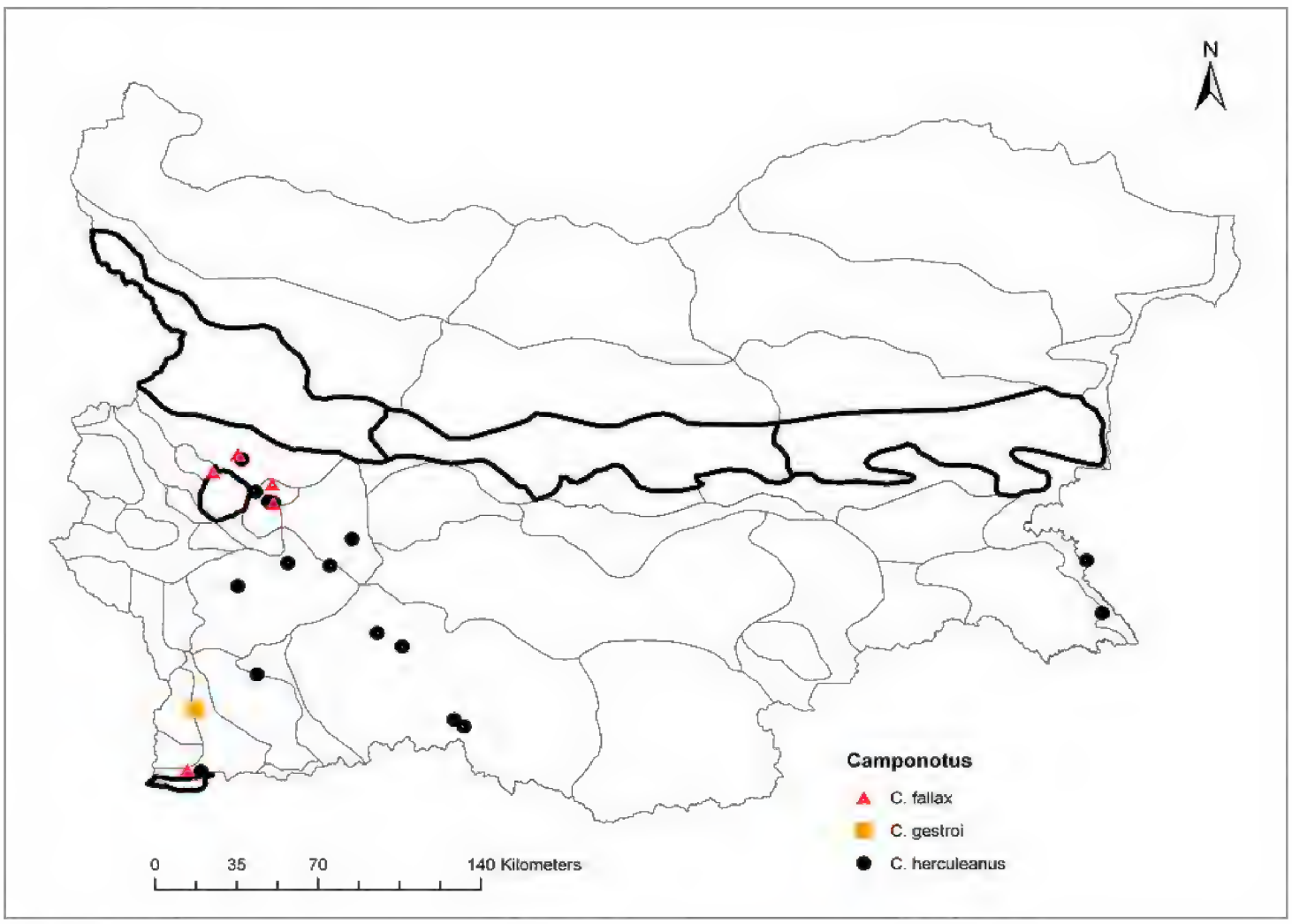
Map 56.


N
Lasius
L. umbratus
L. psammophilus
0
35
70
140 Kilometers

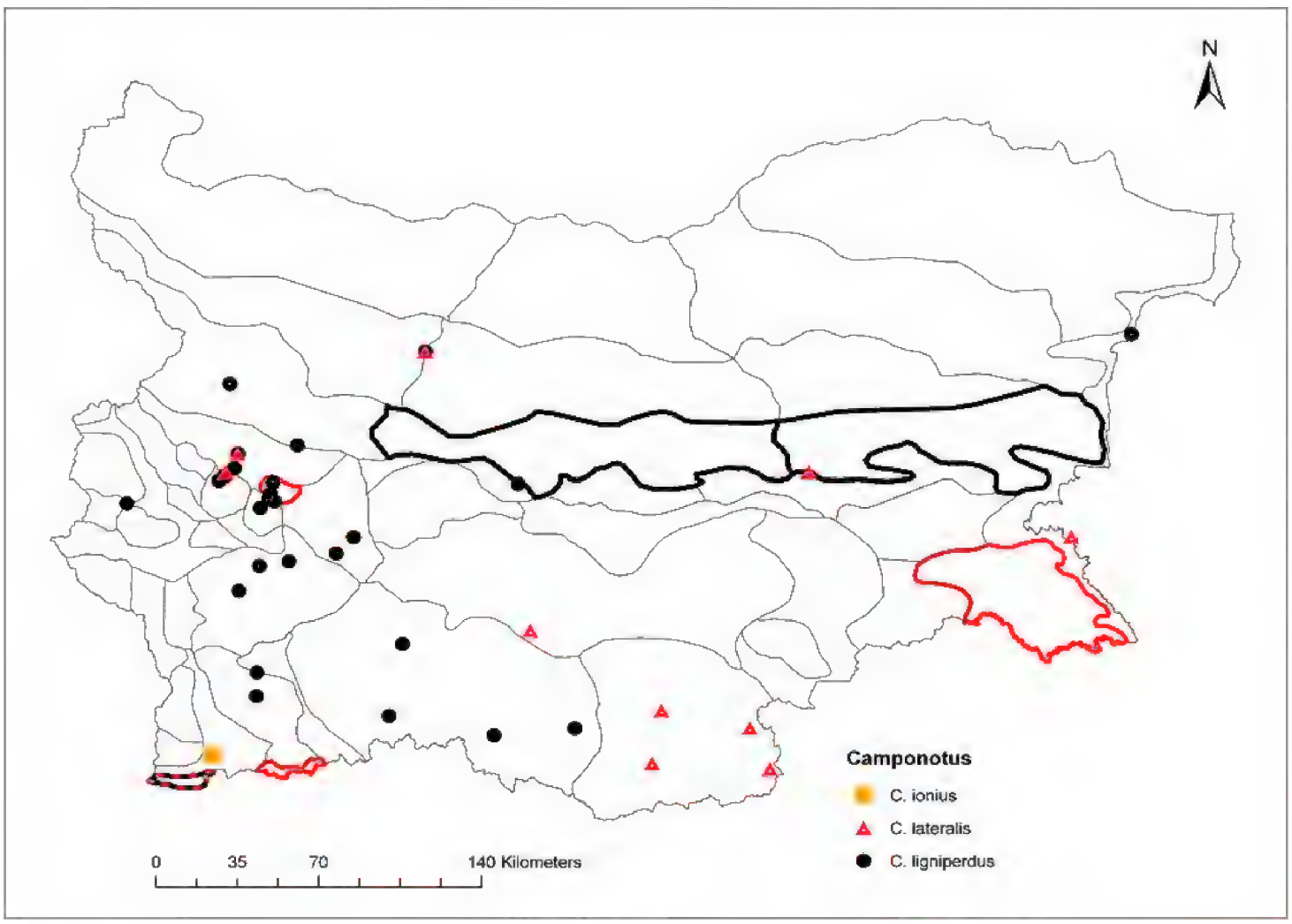
Map 57.


N
Camponotus
C. aegaeus
C. aethiops
C. dalmaticus
0
35
70
140 Kilometers

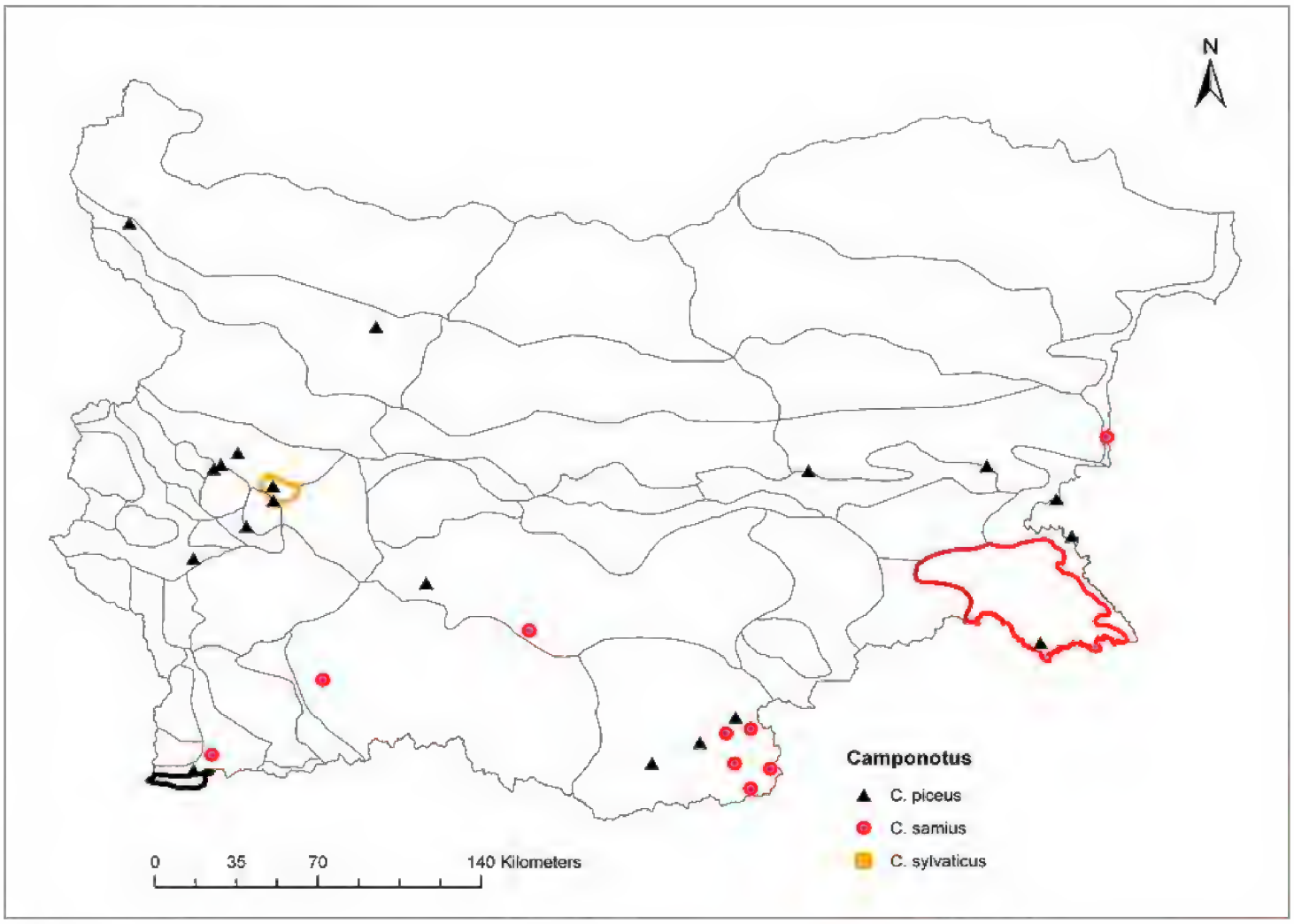
Map 58.


N
Camponotus
C. fallax
C. gestroi
C. herculeanus
0
35
70
140 Kilometers

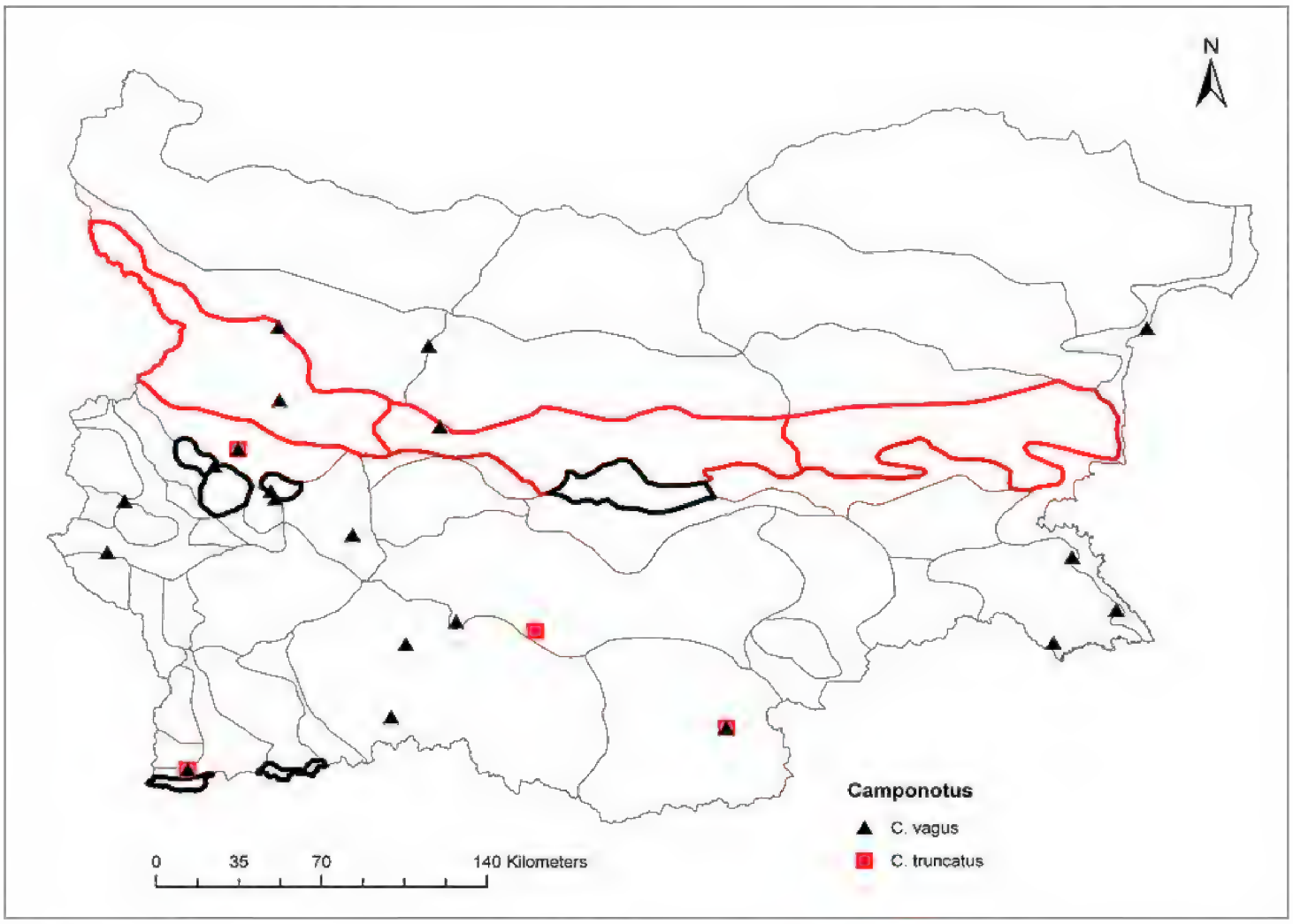
Map 59.


N
Camponotus
C. ionius
C. lateralis
C. ligniperdus
0
35
70
140 Kilometers

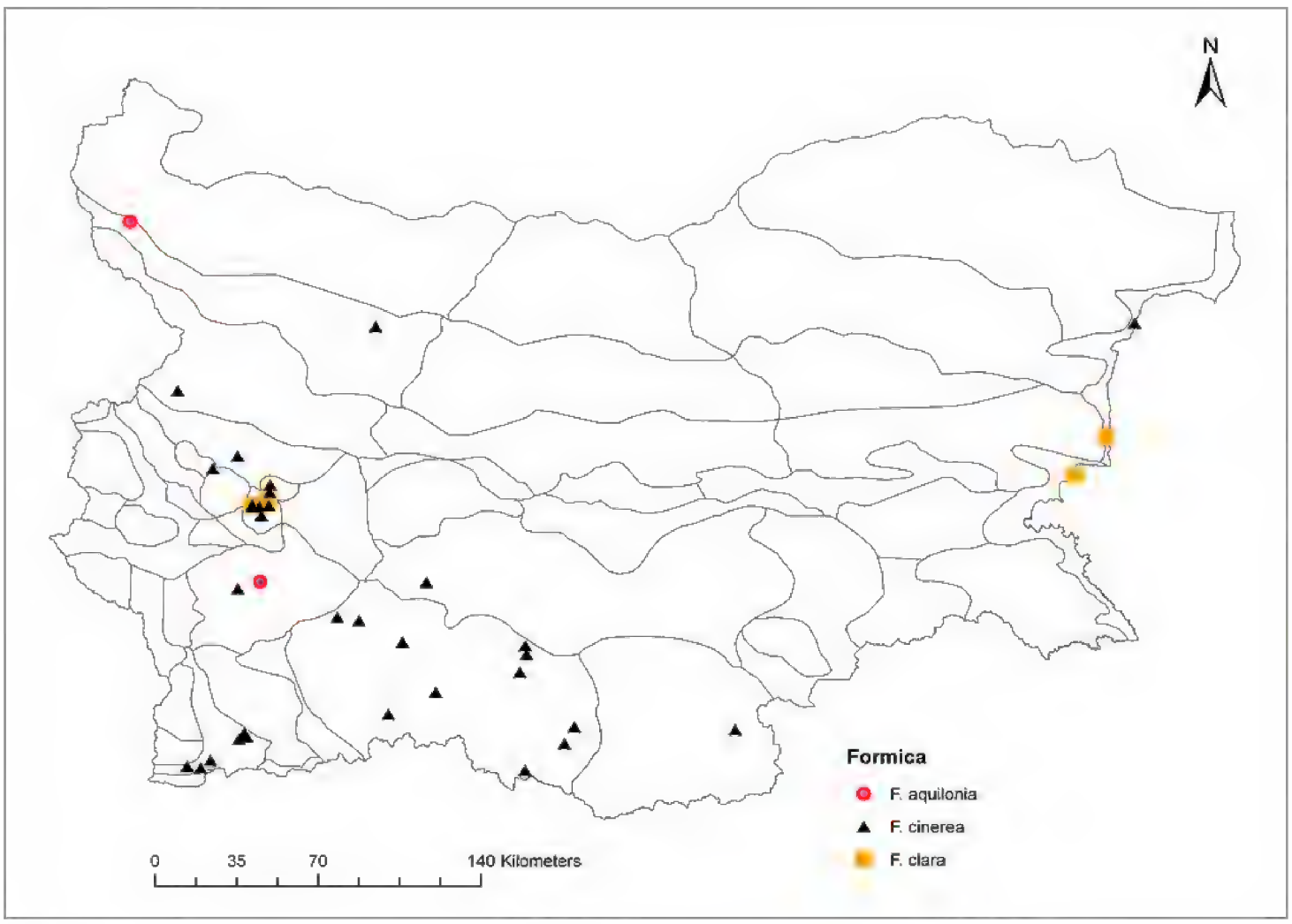
Map 60.


N
Camponotus
C. piceus
C. samius
C. sylvaticus
0
35
70
140 Kilometers

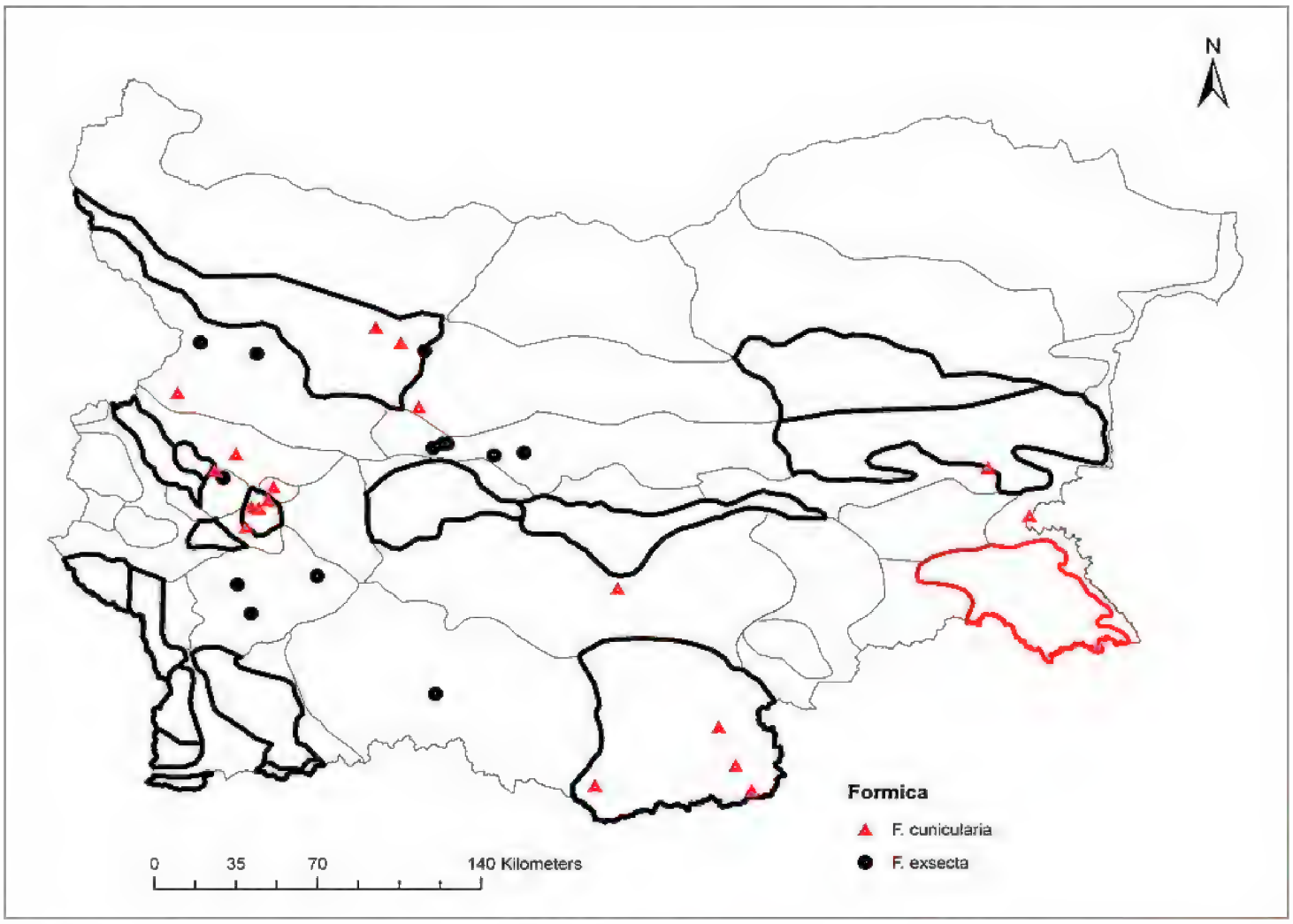
Map 61.


N
Camponotus
C. vagus
C. truncatus
0
35
70
140 Kilometers

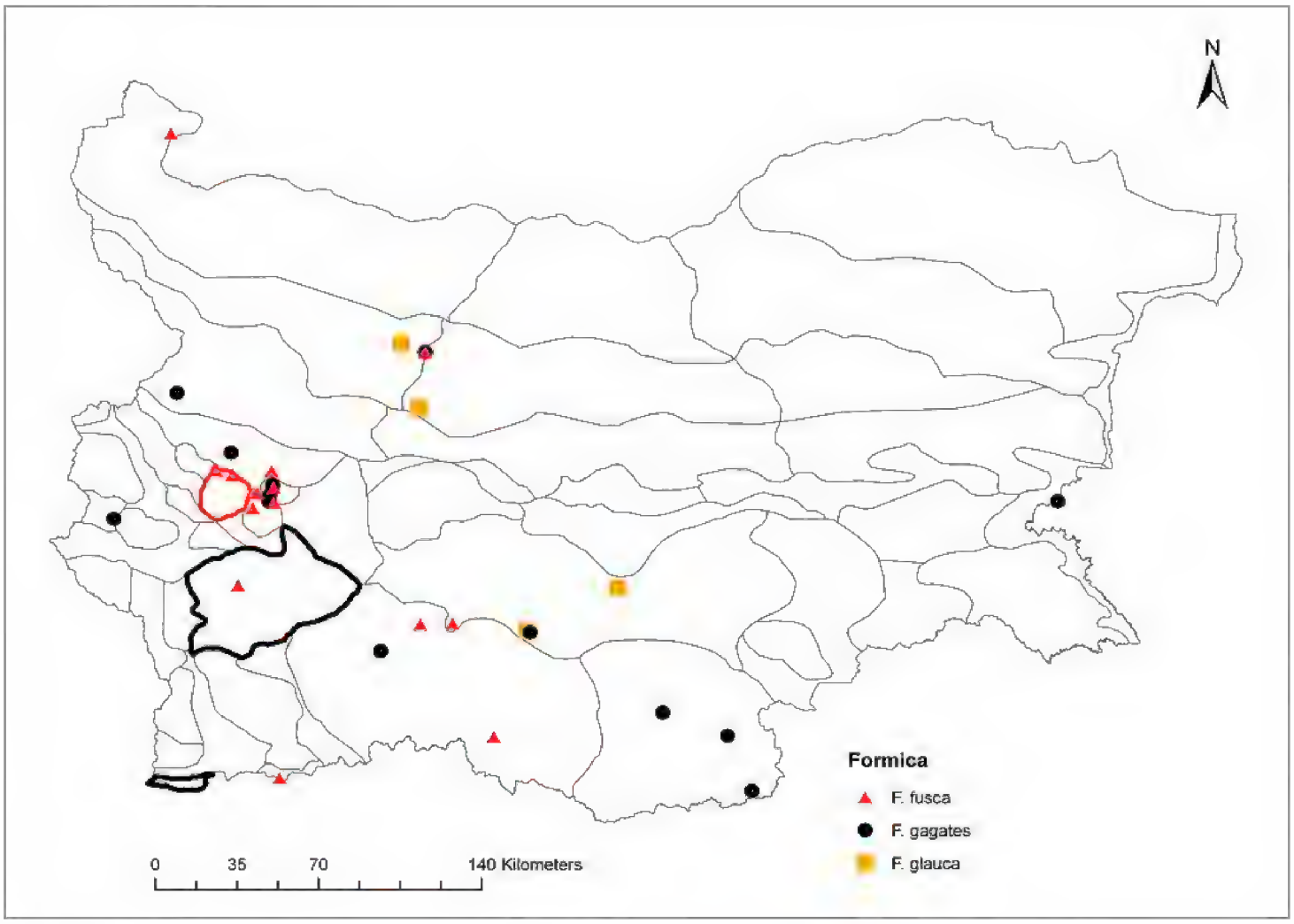
Map 62.


N
Formica
F. aquilonia
F. cinerea
F. clara
0
35
70
140 Kilometers

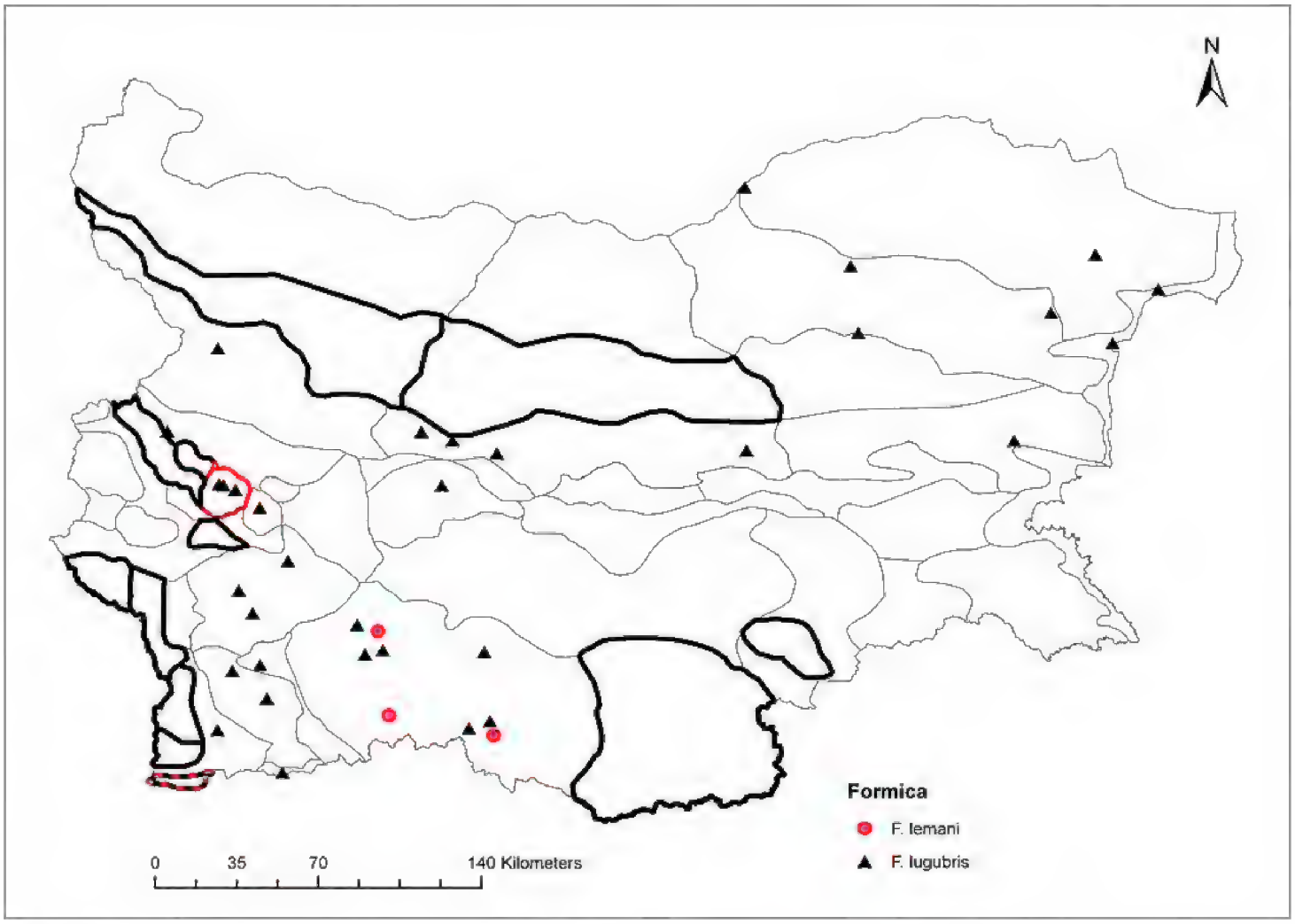
Map 63.


N
Formica
F. cunicularia
F. exsecta
0
35
70
140 Kilometers

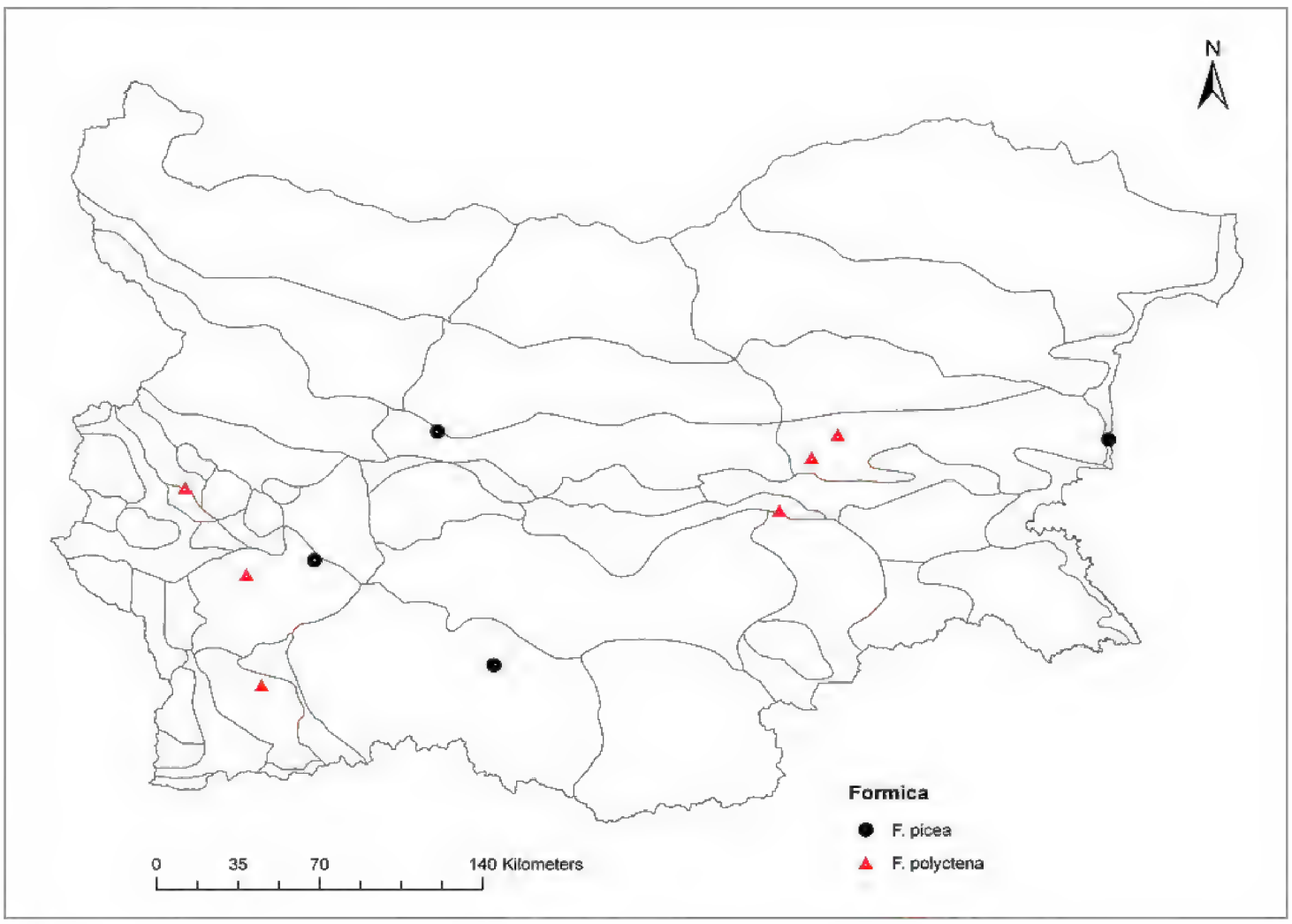
Map 64.


N
Formica
F. fusca
F. gagates
F. glauca
0
35
70
140 Kilometers

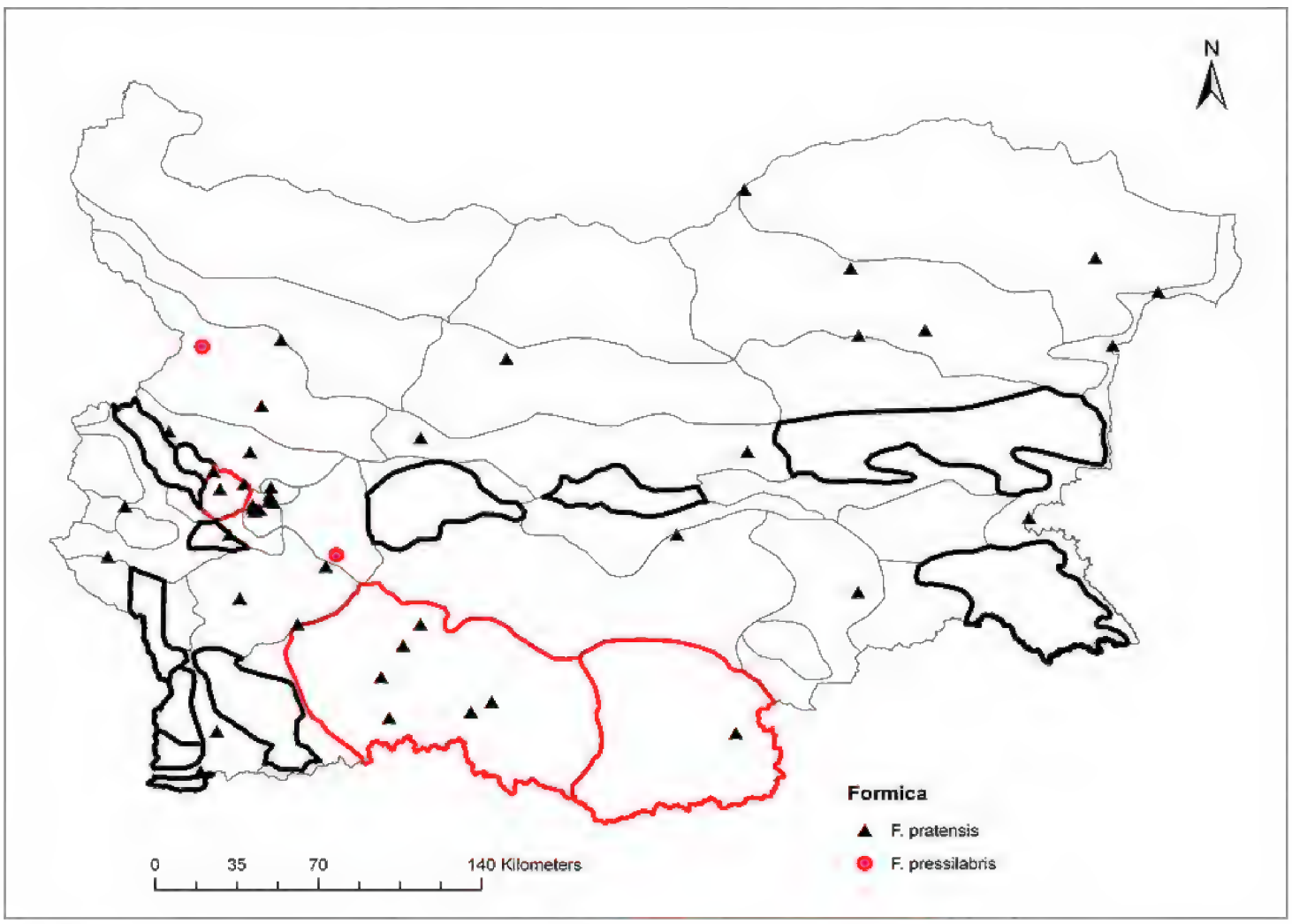
Map 65.


N
Formica
F. lemani
F. lugubris
0
35
70
140 Kilometers

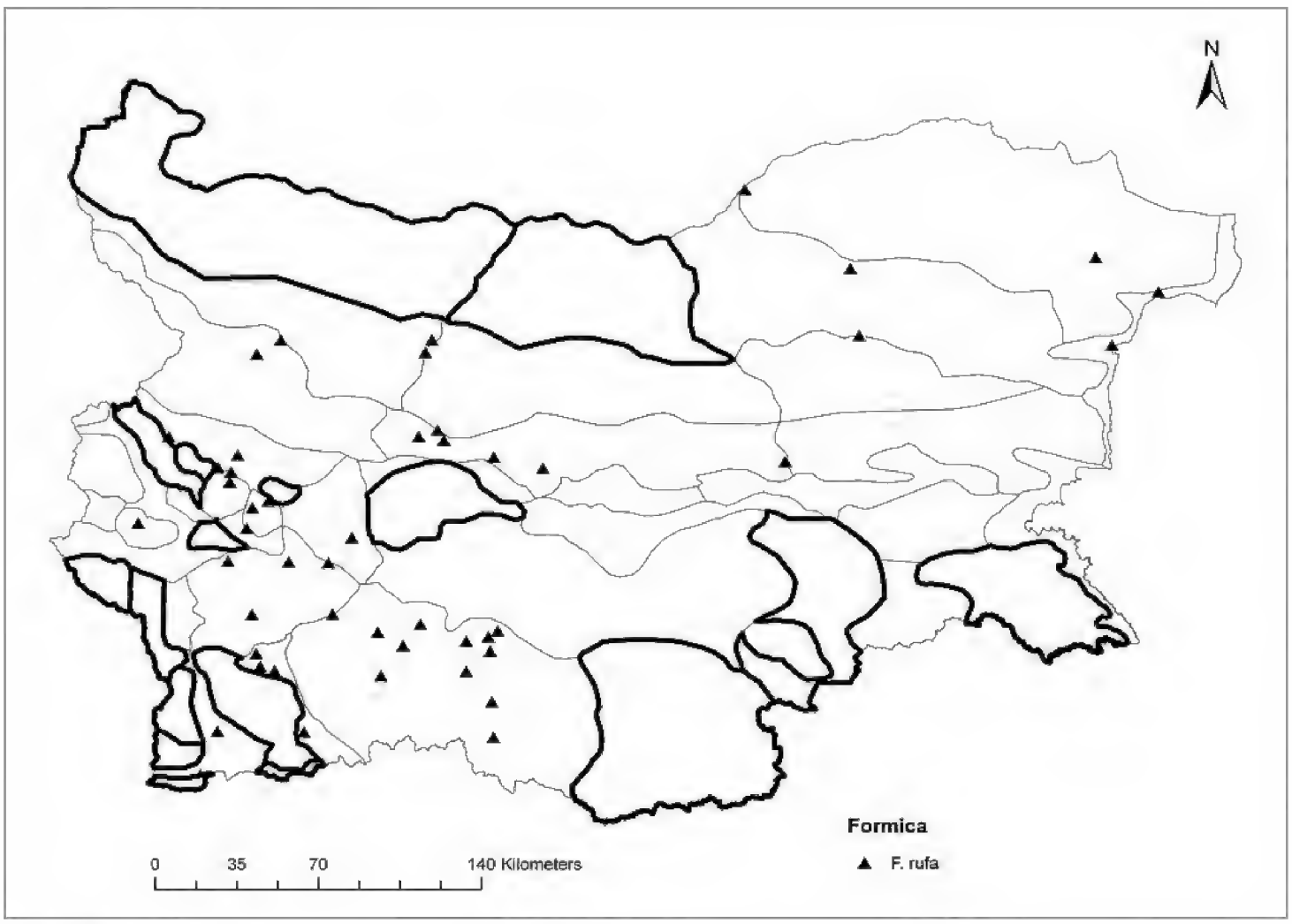
Map 66.


N
Formica
F. picea
F. polyctena
0
35
70
140 Kilometers

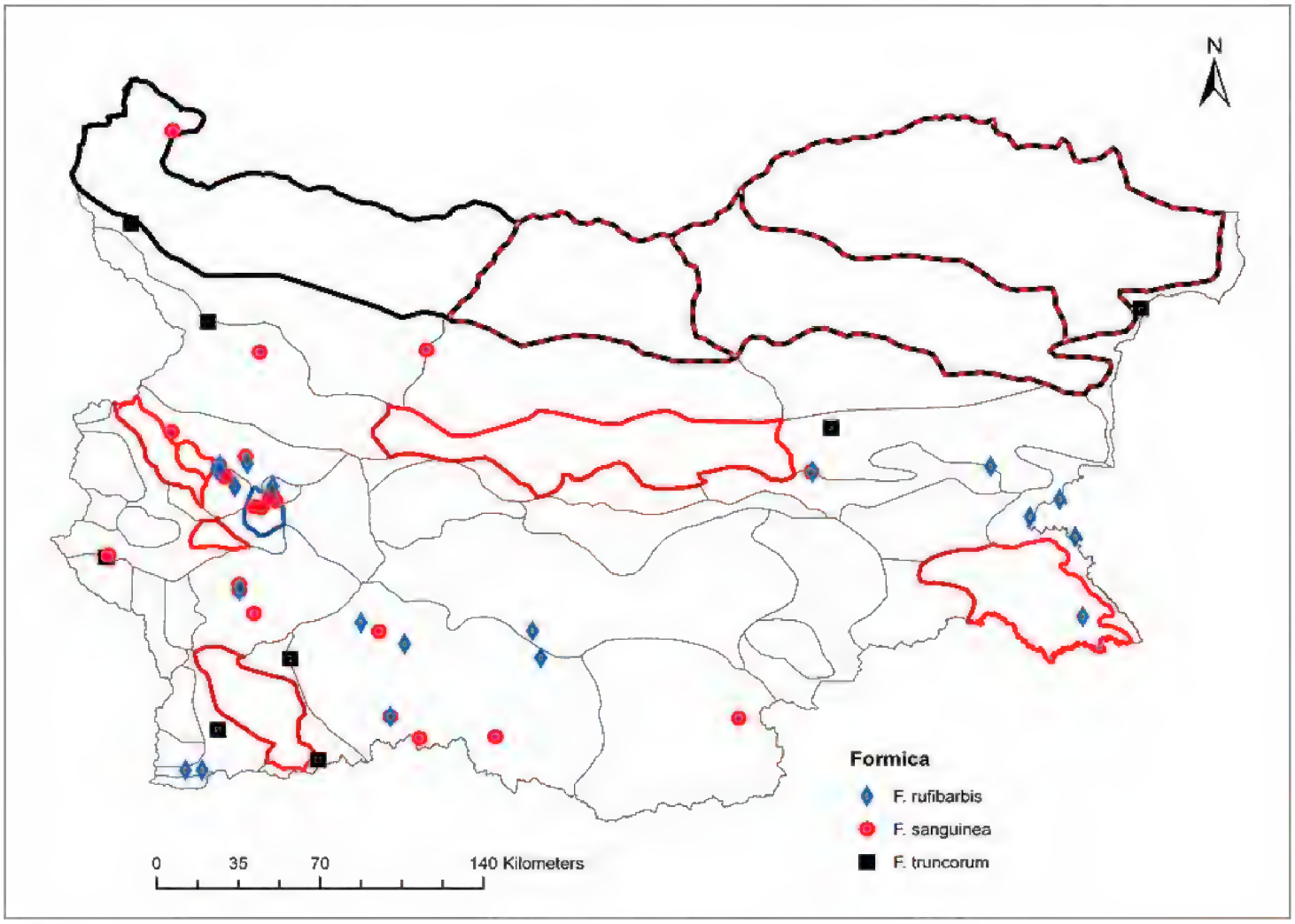
Map 67.


N
Formica
F. pratensis
F. pressilabris
0
35
70
140 Kilometers

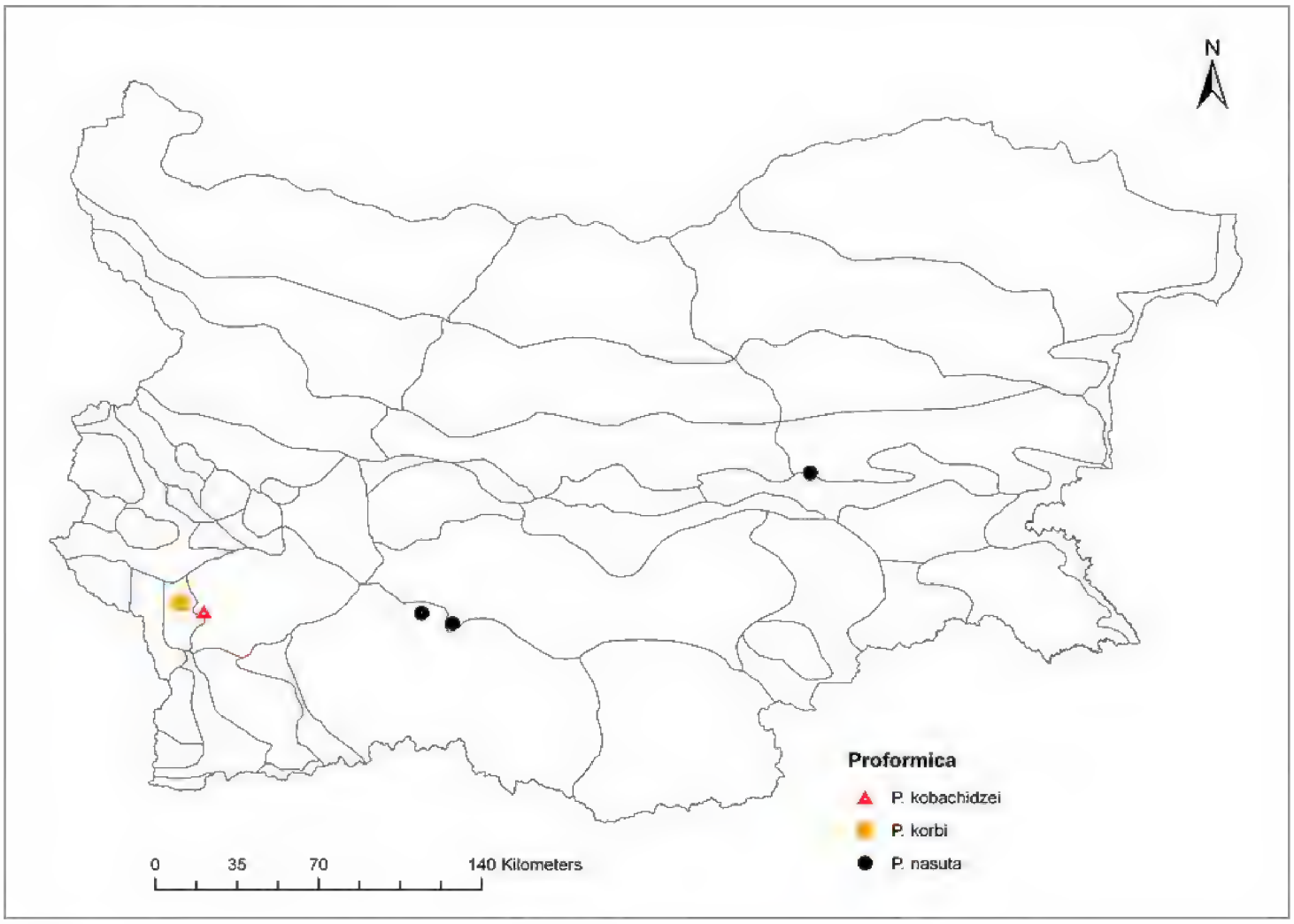
Map 68.


N
Formica
F. rufa
0
35
70
140 Kilometers

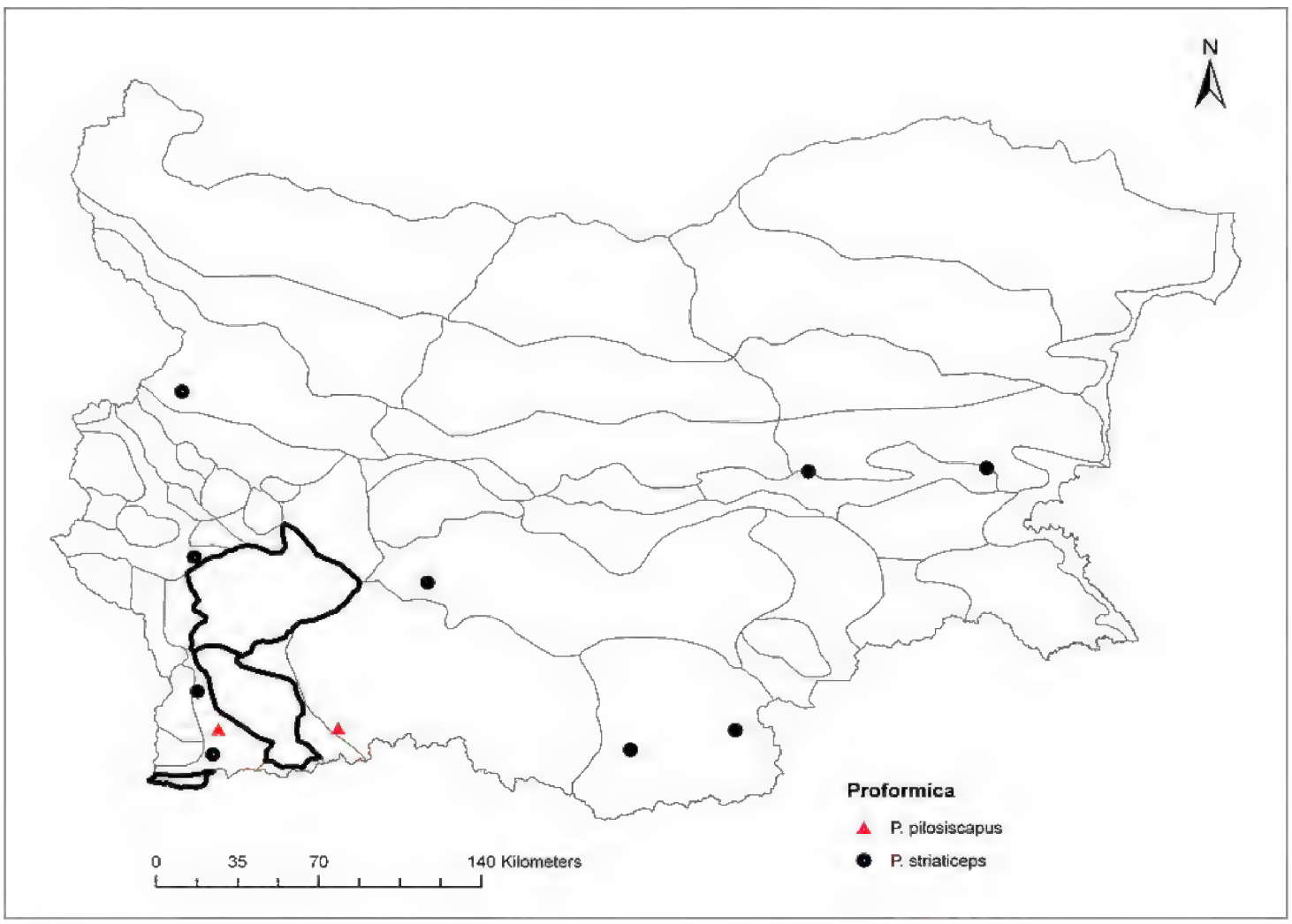
Map 69.


N
Formica
F. rufibarbis
F. sanguinea
F. truncorum
0
35
70
140 Kilometers

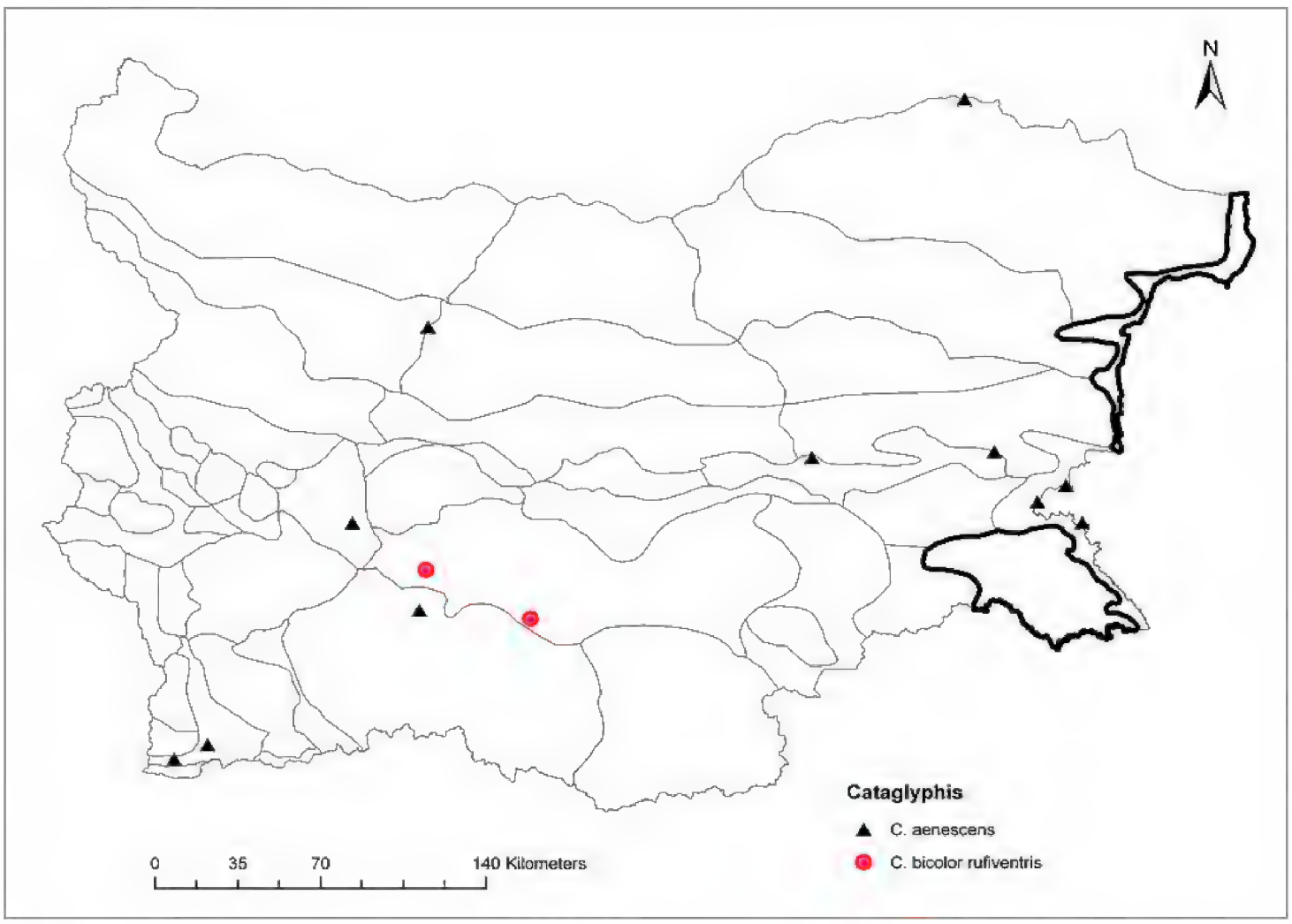
Map 70.


N
Proformica
P. kobachidzei
P. korbi
P. nasuta
0
35
70
140 Kilometers

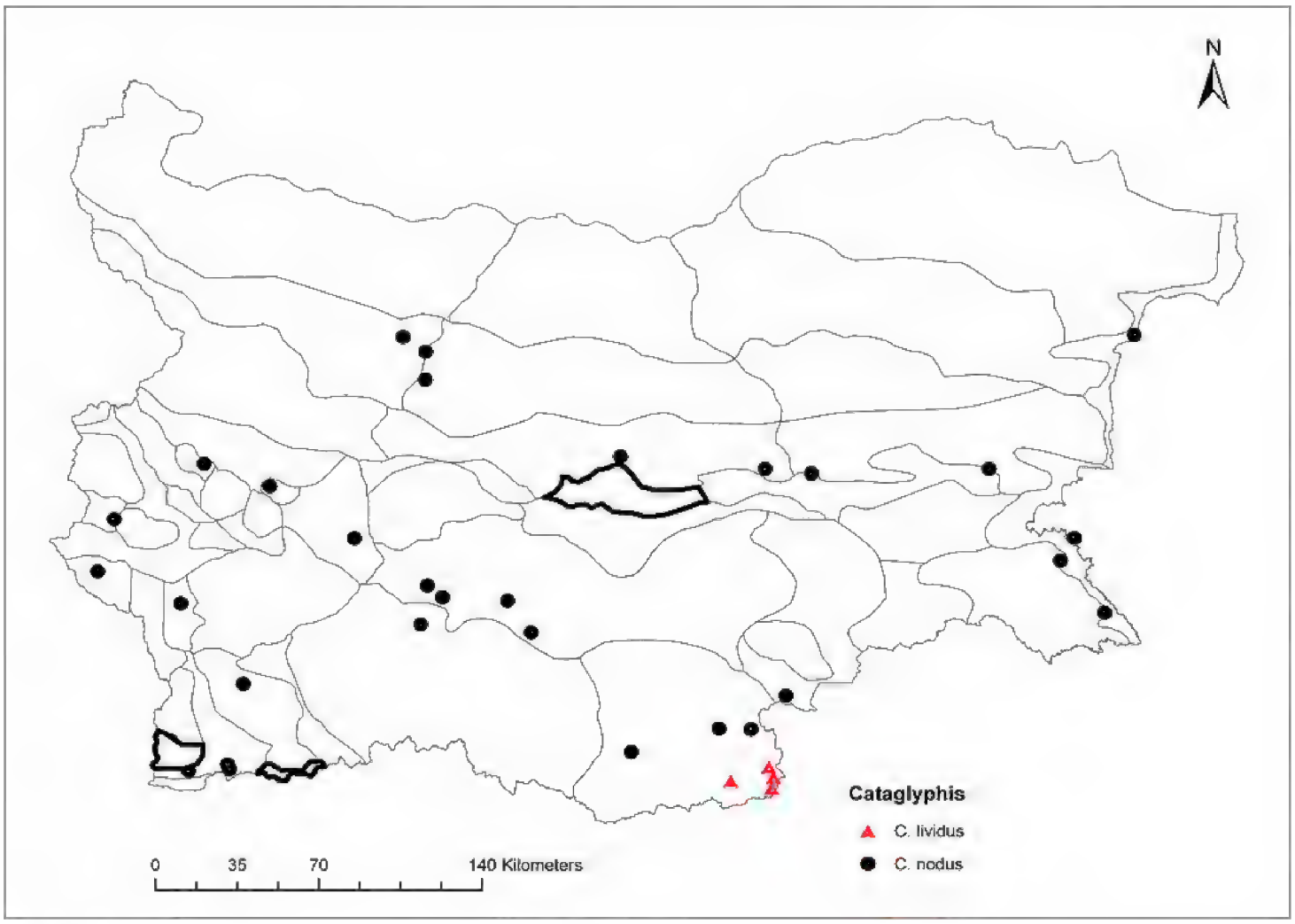
Map 71.


N
Proformica
P. pilosiscapus
P. striaticeps
0
35
70
140 Kilometers

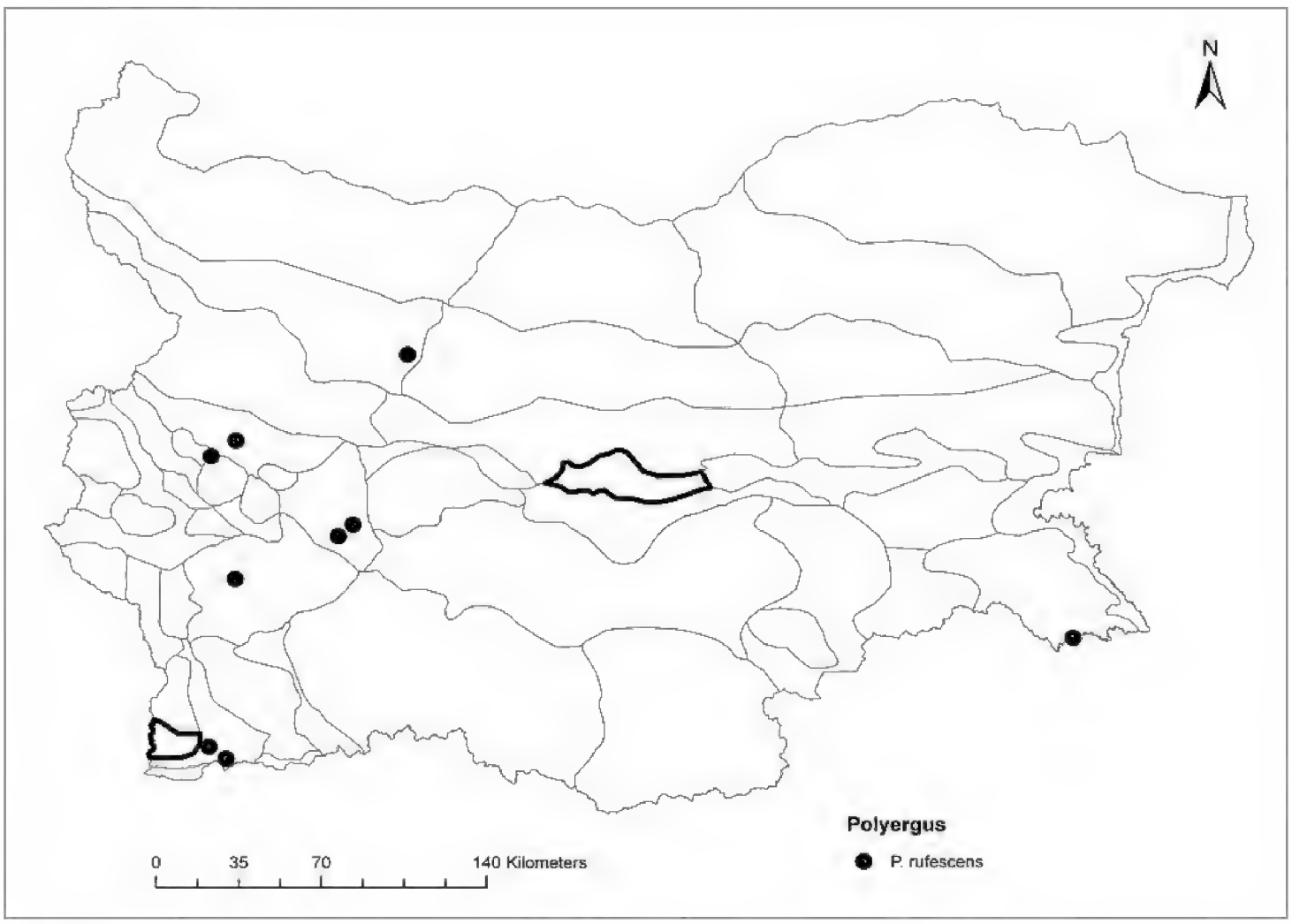
Map 72.


N
Cataglyphis
C. aenescens
C. bicolor rufiventris
0
35
70
140 Kilometers

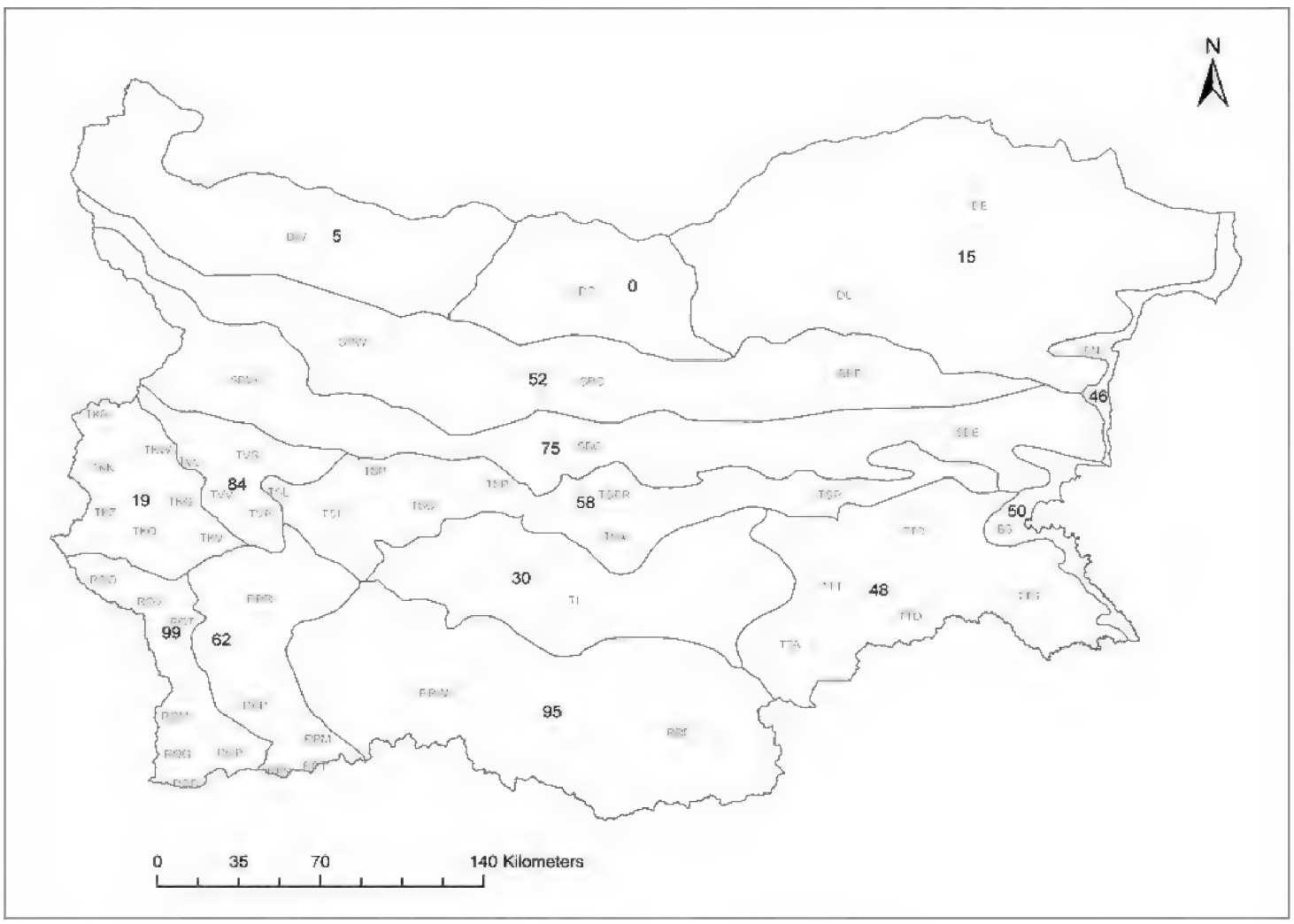
Map 73.


N
Cataglyphis
C. lividus
C. nodus
0
35
70
140 Kilometers

Map 74.


N
Polyergus
P. rufescens
0
35
70
140 Kilometers

Map 75.



Map 76. Total number of ant species for separate regions and subregions

Appendix III: Table of species by regions and subregions in Bulgaria

Species				*Amblyopone denticulata*	*Amblyopone impressifrons*	*Cryptopone ochracea*	*Hypoponera eduardi*	*Hypoponera punctatissima*	*Ponera coarctata*	*Ponera testacea*	*Proceratium melinum*	*Proceratium numidicum*	*Pyramica bauduerи*	*Manica rubida*	*Myrmica constricta*	*Myrmica gallienii*	*Myrmica hellenica*	*Myrmica lobicornis*	*Myrmica lonae*
Danubian Plain			western																
			central																
			eastern			•		•	•		•								
Stara Planina Range system	**Predbalkan**		western													•			
			central											•					
			eastern																
	Stara planina Mts (Balkan)		western																
			central											•				•	
			eastern	•															
Transitional region	**Kraishte-Konyavo subregion**		Golo bardo																
			Verila																
			Konyavska Mt																
			Zemenska Mt																
			Zemen gorge																
			Viskyar																
	Vitosha subregion		Sofia Basin					•	•								•		•
			Vitosha Mt											•		•		•	
			Plana Mt															•	
			Lyulin Mt																
	Srednogorie-Podbalkan subregion		Ihtimaska Sredna Gora																
			Lozenska Mt																•
			Sushtinska Sredna Gora					•											
			Surnena Sredna Gora	•															
			Podbalkan											•					
	Thracian Lowland				•	•					•						•		
	Tundzha-Strandzha subregion		Sakar Mt																
			Bakadzhik-Bourgas district																
			Strandzha Mt						•										•
Rilo-Rhodopi Massif	**Osogovo-Belasitsa group**		Osogovska Mt											•				•	
			Belasitsa Mt						•									•	
			Ograzhden Mt																
		Middle Struma valley	Boboshevo-Simitli																
			Krupnik-Sandanski-Petrich		•	•	•	•	•	•	•				•				
	Rila-Pirin group		Rila Mt											•				•	
			Pirin Mt															•	
			Slavyanka Mt											•				•	
			Mesta valley																
	Rhodopi Mts		western						•					•				•	•
			eastern						•				•						
Black Sea coast			northern						•								•		
			southern						•		•			•			•		

Species				*Myrmica rubra*	*Myrmica ruginodis*	*Myrmica rugulosa*	*Myrmica sabuleti*	*Myrmica scabrinodis*	*Myrmica schencki*	*Myrmica slovaca*	*Myrmica specioides*	*Myrmica sulcinodis*	*Myrmica vandeli*	*Stenamma debile*	*Aphaenogaster epirotes*	*Aphaenogaster gibbosa*	*Aphaenogaster pallida*	*Aphaenogaster subterranea*	*Messor atanassovii*
Danubian Plain		western												•					
		central																	
		eastern													•				
Stara Planina Range system	**Predbalkan**	western					•										•	•	
		central						•											
		eastern																	
	Stara planina Mts (Balkan)	western				•						•		•		•			
		central	•		•	•		•											
		eastern	•		•		•							•				•	
Transitional region	**Kraishte-Konyavo subregion**	Golo bardo																	
		Verila																	
		Konyavska Mt																	
		Zemenska Mt																	
		Zemen gorge																	
		Viskyar																	
	Vitosha subregion	Sofia Basin	•	•	•	•	•	•	•	•	•		•						
		Vitosha Mt	•	•		•	•	•			•	•						•	
		Plana Mt	•	•		•	•	•			•		•						
		Lyulin Mt								•	•								
	Srednogorie-Podbalkan subregion	Ihtimaska Sredna Gora																	
		Lozenska Mt			•	•	•	•											
		Sushtinska Sredna Gora												•					
		Surnena Sredna Gora																	
		Podbalkan																	
	Thracian Lowland				•														•
	Tundzha-Strandzha subregion	Sakar Mt																	
		Bakadzhik-Bourgas district					•											•	
		Strandzha Mt				•			•	•								•	•
Rilo-Rhodopi Massif	**Osogovo-Belasitsa group**	Osogovska Mt																•	
		Belasitsa Mt		•			•				•		•					•	
		Ograzhden Mt																	
		Middle Struma valley	Boboshevo-Simitli																
			Krupnik-Sandanski-Petrich		•				•			•				•				
	Rila-Pirin group	Rila Mt			•	•		•		•	•								
		Pirin Mt				•		•											
		Slavyanka Mt		•												•		•	
		Mesta valley																	•
	Rhodopi Mts	western	•	•	•	•	•	•	•		•		•					•	•
		eastern			•	•								•	•	•		•	
Black Sea coast		northern														•		•	
		southern								•									

| | | |

Species				*Temnothorax saxonicus*	*Temnothorax semiruber*	*Temnothorax sordidulus*	*Temnothorax tauricus*	*Temnothorax tuberum*	*Temnothorax unifasciatus*	*Chalepoxenus muellerianus*	*Myrmoxenus gordiagini*	*Myrmoxenus ravouxi*	*Cardiocondyla bulgarica*	*Cardiocondyla elegans*	*Cardiocondyla nigra*	*Cardiocondyla stambuloffi*	*Anergates atratulus*	*Tetramorium caespitum*	*Tetramorium chefketi*
Danubian Plain		western																	
		central																	
		eastern																	•
Stara Planina Range system	**Predbalkan**	western				•					•							•	
		central							•									•	
		eastern																	
	Stara planina Mts (Balkan)	western		•		•											•	•	•
		central																•	
		eastern			•				•							•		•	
Transitional region	**Kraishte-Konyavo subregion**	Golo bardo																	
		Verila																	
		Konyavska Mt																	
		Zemenska Mt																	
		Zemen gorge																•	
		Viskyar																	
	Vitosha subregion	Sofia Basin						•	•									•	•
		Vitosha Mt		•					•								•	•	•
		Plana Mt							•									•	
		Lyulin Mt																•	
	Srednogorie-Podbalkan subregion	Ihtimaska Sredna Gora																	
		Lozenska Mt							•									•	•
		Sushtinska Sredna Gora																	
		Surnena Sredna Gora																	
		Podbalkan																•	
	Thracian Lowland							•										•	•
	Tundzha-Strandzha subregion	Sakar Mt																	
		Bakadzhik-Bourgas district																•	
		Strandzha Mt							•									•	•
Rilo-Rhodopi Massif	**Osogovo-Belasitsa group**	Osogovska Mt															•		
		Belasitsa Mt			•				•									•	•
		Ograzhden Mt																•	
		Middle Struma valley	Boboshevo-Simitli		•														•
			Krupnik-Sandanski-Petrich	•	•		•					•		•				•	
	Rila-Pirin group	Rila Mt						•	•									•	
		Pirin Mt						•					•	•					•
		Slavyanka Mt																•	
		Mesta valley																•	
	Rhodopi Mts	western			•		•	•	•	•							•	•	
		eastern			•												•	•	•
Black Sea coast		northern		•									•	•		•	•		
		southern							•				•	•		•	•	•	•

	Tetramorium diomedeum
	Tetramorium ferox
	Tetramorium hungaricum
	Tetramorium moravicum
	Strongylognathus kratochvili
	Strongylognathus testaceus
	Dolichoderus quadripunctatus
	Liometopum microcephalum
	Tapinoma erraticum
	Tapinoma madeirense
	Bothriomyrmex communistus
	Bothriomyrmex gibbus
	Bothriomyrmex menozzii
	Bothriomyrmex meridionalis
	Linepithema humile
	Plagiolepis pygmaea
	Plagiolepis taurica
	Lepisiota frauenfeldi
	Lepisiota splendens
	Prenolepis nitens
	Lasius alienus
	Lasius balcanicus
	Lasius bicornis
	Lasius brunneus
	Lasius carniolicus
	Lasius citrinus
	Lasius distinguendus
	Lasius emarginatus
	Lasius flavus
	Lasius fuliginosus
	Lasius jensi
	Lasius meridionalis

Species				*Lasius mixtus*	*Lasius myops*	*Lasius neglectus*	*Lasius niger*	*Lasius nitidigaster*	*Lasius paralienus*	*Lasius platythorax*	*Lasius psammophilus*	*Lasius umbratus*	*Camponotus aegaeus*	*Camponotus aethiops*	*Camponotus dalmaticus*	*Camponotus fallax*	*Camponotus gestroi*	*Camponotus herculeanus*	*Camponotus ionius*
Danubian Plain		western																	
		central																	
		eastern				•													
Stara Planina Range system	**Predbalkan**	western					•							•					
		central		•	•		•												
		eastern																	
	Stara planina Mts (Balkan)	western		•			•							•				•	
		central		•				•											
		eastern		•			•							•	•				
Transitional region	**Kraishte-Konyavo subregion**	Golo bardo																	
		Verila																	
		Konyavska Mt																	
		Zemenska Mt																	
		Zemen gorge		•			•												
		Viskyar																	
	Vitosha subregion	Sofia Basin					•		•	•	•	•		•		•		•	
		Vitosha Mt			•		•							•				•	
		Plana Mt					•	•	•	•	•			•		•		•	
		Lyulin Mt																	
	Srednogorie-Podbalkan subregion	Ihtimaska Sredna Gora												•	•			•	
		Lozenska Mt					•		•	•				•		•			
		Sushtinska Sredna Gora																	
		Surnena Sredna Gora																	
		Podbalkan					•							•					
	Thracian Lowland													•	•				
	Tundzha-Strandzha subregion	Sakar Mt																	
		Bakadzhik-Bourgas district												•					
		Strandzha Mt							•					•				•	
Rilo-Rhodopi Massif	**Osogovo-Belasitsa group**	Osogovska Mt		•															
		Belasitsa Mt					•							•	•			•	
		Ograzhden Mt										•		•					
		Middle Struma valley	Boboshevo-Simitli	•															
			Krupnik-Sandanski-Petrich				•	•					•	•	•	•	•	•	•
	Rila-Pirin group	Rila Mt					•							•	•			•	
		Pirin Mt											•					•	
		Slavyanka Mt												•	•				
		Mesta valley		•															
	Rhodopi Mts	western					•			•		•		•	•			•	
		eastern										•		•	•				
Black Sea coast		northern			•	•		•	•										
		southern					•	•						•	•			•	

| | | |

Species				*Cataglyphis lividus*	*Cataglyphis nodus*	*Polyergus rufescens*
Danubian Plain		western				
		central				
		eastern				
Stara Planina Range system	**Predbalkan**	western				
		central			•	
		eastern				
	Stara planina Mts (Balkan)	western				
		central			•	•
		eastern			•	
Transitional region	**Kraishte-Konyavo subregion**	Golo bardo				
		Verila				
		Konyavska Mt				
		Zemenska Mt				
		Zemen gorge			•	
		Viskyar				
	Vitosha subregion	Sofia Basin			•	•
		Vitosha Mt				
		Plana Mt				
		Lyulin Mt				
	Srednogorie-Podbalkan subregion	Ihtimaska Sredna Gora			•	•
		Lozenska Mt			•	
		Sushtinska Sredna Gora				
		Surnena Sredna Gora				
		Podbalkan			•	•
	Thracian Lowland				•	
	Tundzha-Strandzha subregion	Sakar Mt				
		Bakadzhik-Bourgas district			•	
		Strandzha Mt			•	•
Rilo-Rhodopi Massif	**Osogovo-Belasitsa group**	Osogovska Mt			•	
		Belasitsa Mt				
		Ograzhden Mt			•	•
		Middle Struma valley	Boboshevo-Simitli		•	
			Krupnik-Sandanski-Petrich		•	•
	Rila-Pirin group	Rila Mt				•
		Pirin Mt			•	
		Slavyanka Mt			•	
		Mesta valley				
	Rhodopi Mts	western			•	
		eastern		•	•	
Black Sea coast		northern			•	
		southern			•	